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PROCESS SPECIFICATION

EOS/AMSU-A2, SYSTEM COMPREHENSIVE AND LIMITED PERFORMANCE TESTS TEST PROCEDURE

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FINAL CPT

AE-26156/10

S.O. 509734/OPER. 0580/STEP C

S/N 202/A2

P/N 1356006-1

Report 11336
November 1998

Integrated Advanced Microwave Sounding Unit-A (AMSU-A)

Performance Verification Reports

Final Comprehensive Performance Test Report

P/N: 1356006-1, S/N: 202/A2

Contract No. NAS 5-32314
CDRL 208

Submitted to:

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Submitted by:

Aerojet
1100 West Hollyvale Street
Azusa, California 91702

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1. SCOPE

1.1 ***Scope.*** This process specification establishes the requirements for the Comprehensive Performance Test (CPT) and Limited Performance Test (LPT) of the Earth Observing System Advanced Microwave Sounding Unit - A2 (EOS/AMSU-A2), referred to as the unit. The unit is defined on Drawing 1356006.

1.2 ***Procedure sequence.*** The sequence of CPT/LPT testing is shown in Figure 1. At the discretion of the test engineer the order of tests may be changed.

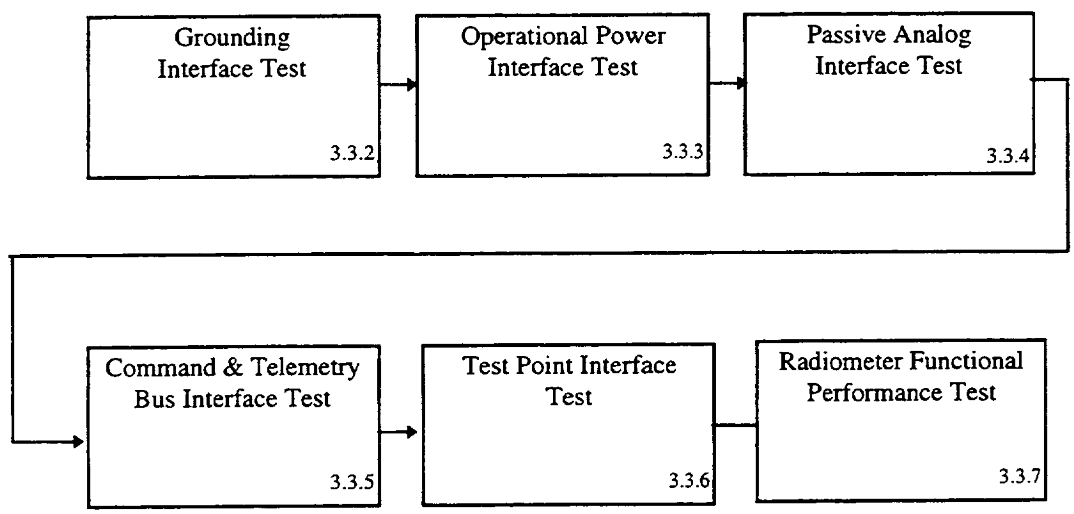

Figure 1. Sequence of EOS/AMSU-A2 CPT/LPT Testing

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2. APPLICABLE DOCUMENTS

2.1 ***Government documents.*** The following documents form a part of this specification to the extent specified herein. The latest issue is applicable.

SPECIFICATIONS

NASA (Goddard Space Flight Center (GSFC))

S-480-80	Performance and Operation Specification for the EOS/ METSAT Integrated Programs AMSU-A Instrument (POS)
S-480-79	Performance Assurance Requirements for the EOS/METSAT Integrated Programs AMSU-A Instrument (PAR)
422-11-12-01	General Interface Requirements Document for EOS Common Spacecraft /Instruments EOS PM Project (GIRD)
422-12-12-02	Unique Instrument Interface Document for the Advanced Microwave Sounding Unit (AMSU-A) EOS PM Project (UIID)

STANDARDS

MIL-STD-45662	Calibration Systems Requirements

(Copies of government documents should be obtained as indicated in the Department of Defense Index of Specifications and Standards).

2.2 ***Non government documents.*** The following documents form a part of this specification to the extent specified herein. The latest issue is applicable.

2.2.1 ***TRW documents***

SPECIFICATIONS

D24845	Interface Control Document for Advanced Microwave Sounding Unit - A2 (ICD)
D25093	Instrument Interface Database for the AMSU-A2

(Copies of TRW documents may be obtained from TRW Inc.).

2.2.2 ***Aerojet documents***

STANDARDS

STD-2454	Requirements for Electrostatic Discharge Control

SPECIFICATIONS

AE-26002/2	AMSU-A2 Antenna Drive Subsystem Test Procedure
AE-26156/8	EOS/AMSU-A2 Subsystem Integration Procedure
AE-26357	AMSU-A Transportation and Handling Procedure

SPECIFICATIONS - Cont

AE-26600	EOS/AMSU-A Firmware Test Procedures

REPORTS

10353	EOS/AMSU-A Contamination Control Plan
10443	EOS/AMSU-A Software User's Guide (STE Software)
10458	EOS/AMSU-A Firmware Requirements
10974	EOS/AMSU-A Firmware Test Report

DRAWINGS

1356006	EOS/AMSU-A2 Assembly
1356648	Cable Assembly, EOS Lab Test
1356655	Console Assembly, METSAT and EOS STE
1338427	Cover, ESD Shielded Bag
SK1358702	9 Pin Breakout Box
SK1358704	25 Pin Breakout Box
SK1358705	37 Pin Breakout Box
SK1360106	On/Off Switch

(Copies of Aerojet documents may be obtained from Gencorp Aerojet, Azusa Operations, CAGE 70143, P.O. Box 296, Azusa, California, 91702-0296).

3. REQUIREMENTS

3.1 *General test requirements*

3.1.1 ***Equipment.*** All measurements shall be made using the test equipment or its equivalent as specified in Table I. Equivalent test equipment shall be approved by Systems Engineering and Quality Assurance. Test equipment and gauges required to perform examinations and tests shall be controlled by a calibration system as specified in MIL-STD-45662.

All inspection, measurement and test equipment used shall be currently calibrated to certified standards. The date of last calibration and calibration due date shall be displayed on each item of equipment subject to calibration and recorded at the time of test performance as specified in detailed procedures.

3.2 ***Materials.*** Not applicable.

3.3 ***Required procedures and operations.*** The unit shall be subjected to the tests shown in Figure 1 and Table II.

3.3.1 ***Integration and test preliminary conditions.***

3.3.1.1 ***Limited performance test (LPT).*** The Limited Performance Test shall consist of the test procedures in the LPT column of Table II.

3.1.1.2 ***Comprehensive performance test (CPT).*** Three types of Comprehensive Performance Testing are shown in Table II. The first and final CPTs are the same except for paragraph 3.3.5.1 which is performed during the first protoflight unit CPT. The first CPT is performed prior to the start of environmental testing. Sub CPTs are intermediate comprehensive performance tests performed during environmental testing. The final CPT is performed after the completion of environmental testing. Table II shows the required tests for each CPT.

3.3.1.3 ***Integration and test facilities.*** Unless otherwise specified, all testing and inspection of the EOS/AMSU-A2 shall be conducted at Aerojet, Azusa Operations, Azusa, California.

3.3.1.4 ***Environment.*** Unless otherwise specified all testing and inspection operations shall be performed under the following laboratory ambient conditions:

a. Handling in accordance with AE-26357

b. Contamination control in accordance with Report 10353

c. Temperature: $+23 \pm 10$ degrees Celsius

d. Pressure: 610 to 810 torr

e. Humidity: $50 \pm 20\%$ (no condensation)

f. The instrument shall be placed in its protective bag (1338427) when not in use.

3.3.1.5 ***Integration testing/inspection.*** Prior to the start of CPT/LPT testing, the unit should be in the final system configuration as determined by the successful completion of the subsystem integration procedure, AE-26156/8.

3.3.1.6 ***Electrostatic discharge (ESD) certification.*** Certification for handling ESD sensitive equipment in accordance with STD-2454 is required for all personnel working on the EOS/AMSU-A2 instrument.

Table I. Required Test Equipment

Item	Qty	Equipment	Manufacturer	Model No,
1	1	9-Pin Breakout Box	Aerojet	SK1358702-1/2536-3743
2	1	25-Pin Breakout Box	Aerojet	SK1358704-1/2536-3746
3	1	37-Pin Breakout Box	Aerojet	SK1358705-1/2536-3745
4	1	AMSU-A Special Test Equipment (STE)	Aerojet	1356655-1
5	1	STE Interface Cable J1 (W31)	Aerojet	1356648-1
6	1	STE Interface Cable J2 (W32)	Aerojet	1356648-2
7	1	STE Interface Cable J3 (W33)	Aerojet	1356648-3
8	1	STE Interface Cable J4 (W34)	Aerojet	1356648-4
9	1	Cold Target	Aerojet	T-1291000-1
10	1	Digital Multimeter	Fluke/Tektronix	77/DMM916
11	1	Spectrum Analyzer	Hewlett-Packard	8566B/8590L
12	1	Plotter	Hewlett-Packard	7475A
13	1	Digital Multimeter	Hewlett-Packard	34401A
14	1	Digital Oscilloscope	Tektronix	TDS386/2221A
15	1	Dynamic Signal Analyzer	Hewlett-Packard	3562A/3563
16	1	Current Probe	Tektronics	AM503
17	1	Frequency Counter	Hewlett-Packard	5316A
18	1	Function Generator	Hewlett-Packard	3325A/B
19	1	Power Supply	Power Designs	3650-S
20	1	Oxygen Monitor	Bio Systems	3100
21	2	Cryo Protective Gloves	Lab Safety Supply	5932L
22	1	Protective Face Mask	Sellstrom	124-390\380
23	1	Cold Target Support	Aerojet	T-1291001-1
24	1	On/Off Switch	Aerojet	SK1360106
25	1	Power Supply	Hewlett-Packard	HP-6205B
26	1	Liquid Nitrogen Container	Cole Parmer	NO3726-20
27	1	Protective Apron	Lab Safety Supply	8A-7549-3
28	1	Sweep Oscillator	Hewlett-Packard	8350 Series
29	1	Plug-In	Hewlett-Packard	83570A
30	1	Plug-In	Hewlett-Packard	83572C

Table II. AMSU-A2 Performance Tests

Paragraph	Description	1st CPT	LPT	Sub CPT	Final CPT
3.3.2	Grounding Interface Test	X	X	X	X
3.3.3	Operational Power Interface Test				
3.3.3.1	Quiet Power Bus				
3.3.3.1.1	Quiet Power Bus Operational Power Test	X		X	X
3.3.3.1.2	Quiet Power Bus Operational Power Test (LPT Only)		X		
3.3.3.1.3	Quiet Power Bus Turn On Transient Test	X			X
3.3.3.2	Noisy Power Bus				
3.3.3.2.1	Noisy Power Bus Operational Power Test	X		X	X
3.3.3.2.2	Noisy Power Bus Turn On Transient Test	X			X
3.3.3.3	Survival Heater Power Bus Interface Test				X
3.3.4	Passive Analog Interface Test	X	X	X	X
3.3.5	Command & Telemetry Bus Interface Test				
3.3.5.1	FQT of the EOS/AMSU-A1 Firmware (PFM Only)	X			
3.3.5.2	Instrument Commanding Verification	X	X	X	X
3.3.5.3	Science and Engineering Data Verification	X	X	X	X
3.3.5.4	1553 Bus Interface Test	X			X
3.3.6	Test Point Interface Test				
3.3.6.1	8 Second Sync Pulse Verification	X		X	X
3.3.6.2	Integrate/Hold & Dump Signal Verification	X		X	X
3.3.6.3	Radiometer Channel Analog Output Verification	X		X	X
3.3.6.4	GSE-1 Mode Verification	X			X
3.3.6.5	GSE-2 Mode Verification	X			X
3.3.6.6	GSE-3 Mode Verification	X			X
3.3.6.7	GSE-4 Mode Verification	X			X
3.3.6.8	GSE-5 Mode Verification	X			X
3.3.6.9	GSE-7 Mode Verification	X			X
3.3.7	Radiometer Functional Performance Test				
3.3.7.1	Relative Radiometer NEΔT Measurements	X	X	X	X
3.3.8	Channel Identification Test				X

3.3.1.7 ***CPT/LPT preparation checklist.*** Prior to starting the integration, perform the following procedures.

1. Visually inspect the instrument. Check for physical damage and cleanliness.

2. Verify proper installation of the ESD protective mat and wriststraps. Refer to STD-2454 for ESD protection instructions.

3. Verify that each connector of the spacecraft interface has a connector saver installed.

4. Obtain the required test equipment listed in Table I. Verify that the test equipment requiring calibration is currently calibrated.

5. Verify operation of the Special Test Equipment (STE) shown in Figure 2 by itself. Make sure that the current limits on the two power supplies that interface to the instrument are set correctly. The Q supply should be set to 3 amps and the N/S supply should be set to 1.5 amps. Refer to Figure 3 for the STE power supply panel layout. Figures 4 through 6 show other panels on the STE that will be referenced later in this procedure.

6. Verify that all of the required procedures and drawings listed in 2.2.2 are available for reference.

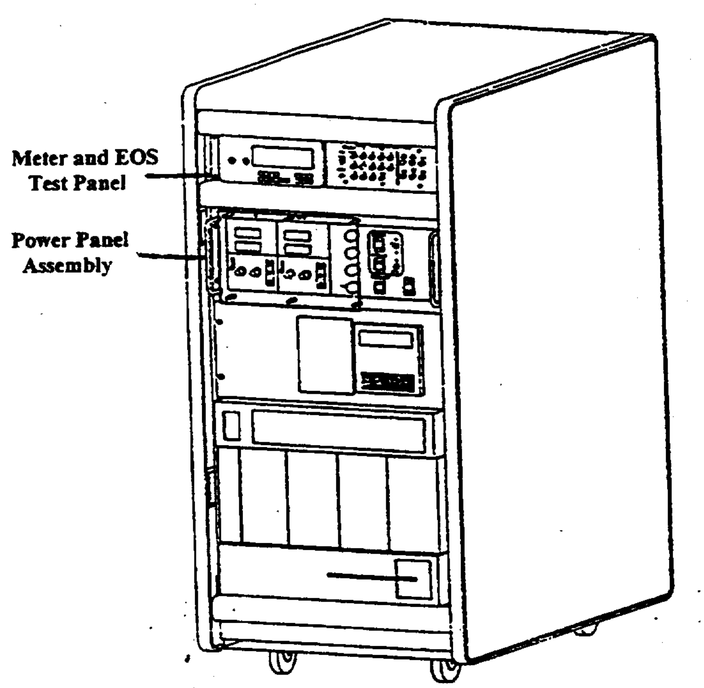


Figure 2. Special Test Equipment (STE)(1356655)

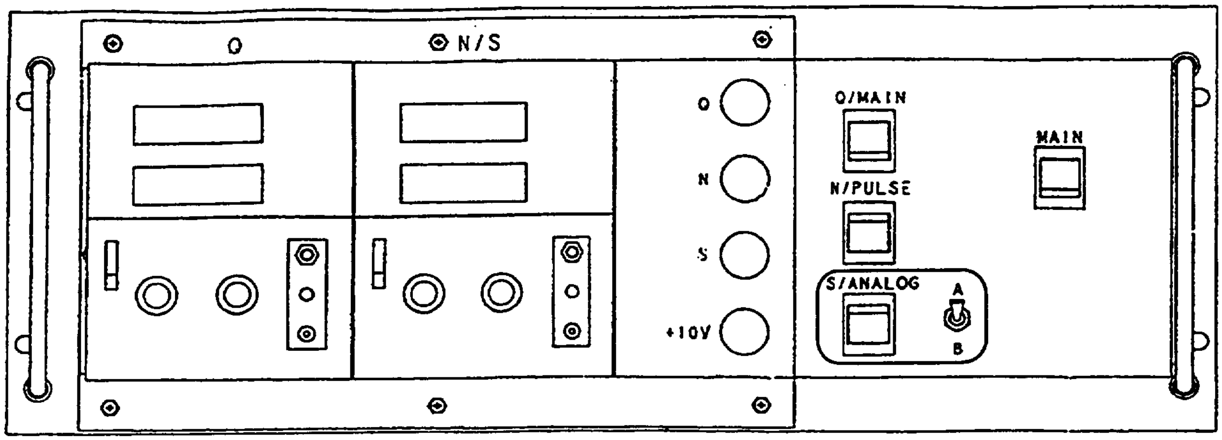


Figure 3. STE Front Power Supply Panel Layout

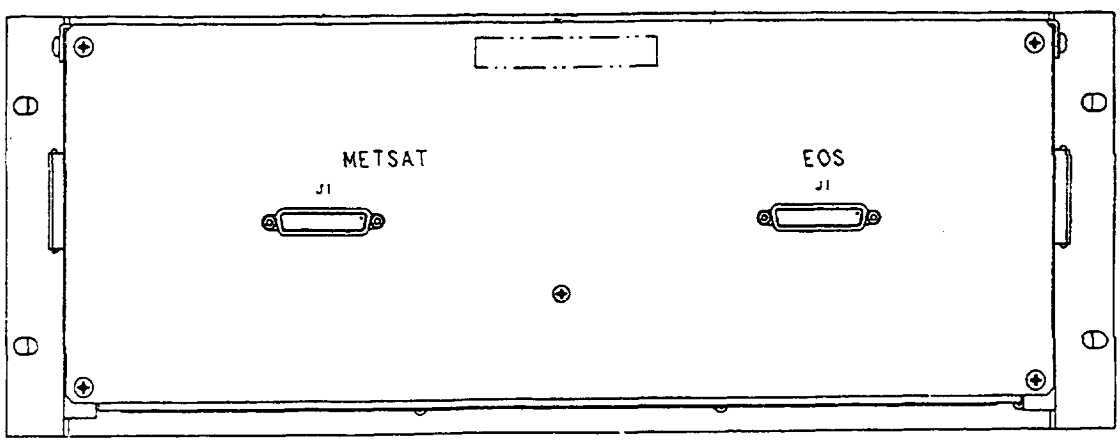


Figure 4. STE Rear Power Supply Panel Layout

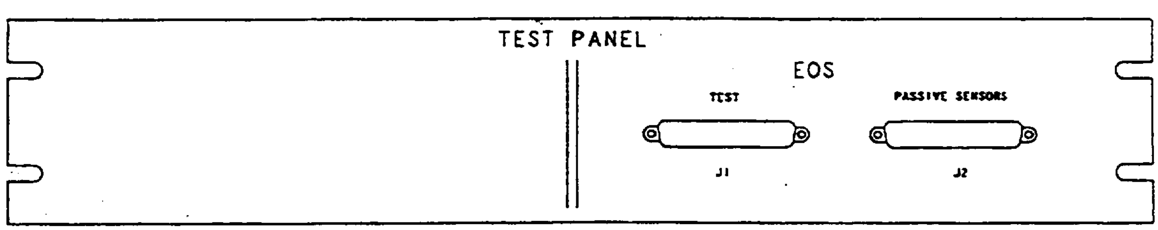


Figure 5. STE Rear Test Panel Layout

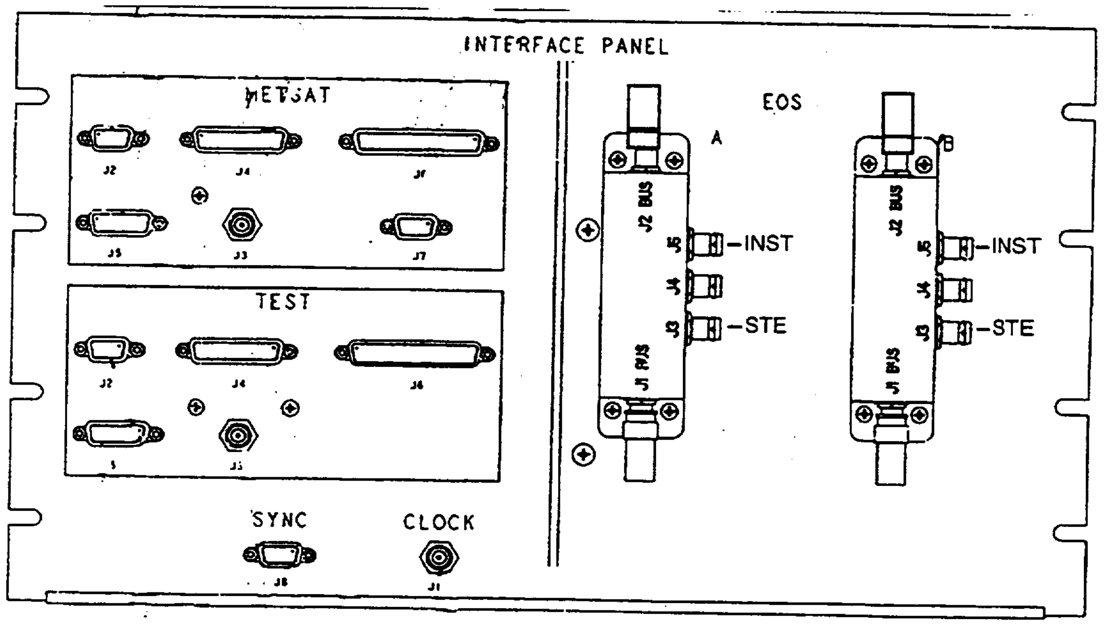


Figure 6. STE Rear Interface Panel Layout

3.3.2 ***Grounding interface test.*** This test provides the verification of the unit grounding requirements found in the following documents:

UIID Waiver 5 (12)

GIRD Sections 5.3 and 6.2.2 (except section 5.3.5.2)

POS Section 4.4.1

ICD Section 5.3

To verify these requirements, perform the following procedures.

1. Configure the unit as shown in Figure 7. Verify that connectors J1, J2, J3 and J4 have connector savers installed. Connect a 25 Pin breakout box at J1. Connect a 37 Pin breakout box at J2. Connect a 9 pin breakout box at J3. Connect a 37 pin breakout box at J4.

2. Measure and record continuity or isolation between the points as specified on Test Data Sheet (TDS) 1.

3. Remove the breakout boxes from J2 and J3 ensuring that the connector savers remain in place.

3.3.3 ***Operational power interface test.*** This test provides the verification of the operational power interface requirements found in the following documents:

UIID - Section 3.3 and waivers 5(3), 5(7), 5(9), and 5(11)

GIRD - Sections 5.1.2 and 5.2

POS - None

ICD - Sections 5.1.2 and 5.2

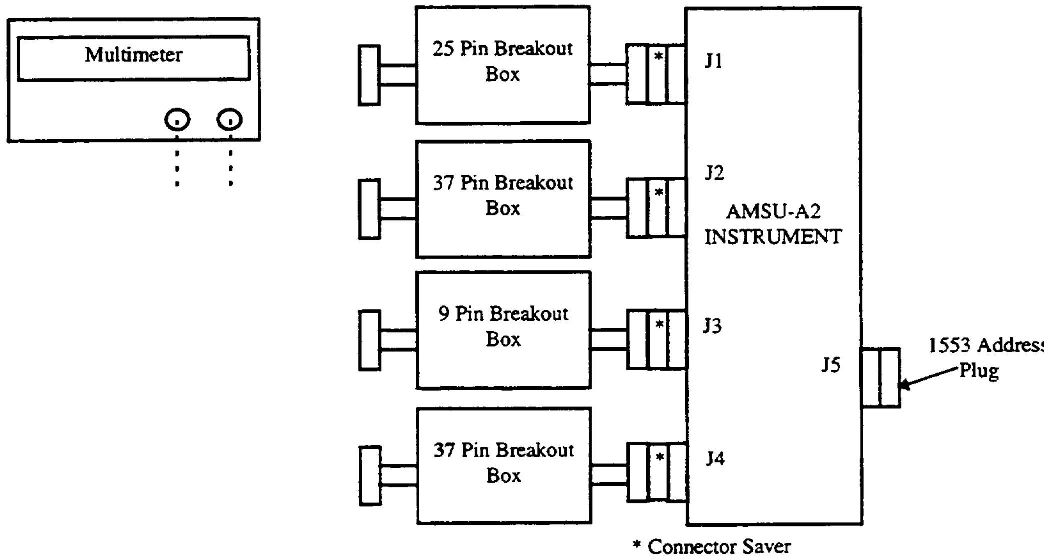


Figure 7. Setup for Grounding Interface Test

Operational power is delivered to the unit through spacecraft interface connector J1 as follows:

a. Quiet power bus (3.3.3.1)

b. Noisy power bus (3.3.3.2)

c. Survival heater power bus (3.3.3.3)

3.3.3.1 ***Quiet power bus interface tests.*** The quiet bus is active immediately upon the introduction of spacecraft power to the bus. There is no internal control within the unit. The quiet power bus shall be verified by performing the following tests:

1. Quiet power bus operational power test (3.3.3.1.1)

2. Quiet power bus operational power test (LPT only) (3.3.3.1.2)

3. Quiet power bus turn on transient test (3.3.3.1.3)

3.3.3.1.1 ***Quiet power bus operational power test.*** The Quiet Power Bus operational power shall be verified at combinations of three voltages (+27, +29, and +31 volts). The operational power test will be conducted for the unit in full scan mode as follows:

1. With the STE main power off and the STE power panel turned off (main power, Q/Main, N/Pulse, and S/Analog switches as shown in Figure 3 in the off position), connect the instrument as shown in Figure 8. This setup assumes a dc impedance from the spacecraft supplied power through fuse and cabling to the unit on the order of 0.3 ohms.

2. Breakout boxes at J1 and J4 should still be connected to the unit from paragraph 3.3.2 testing.

3. Connect the STE to the instrument using the following STE interface cables:

   a. STE interface cable J1 (1356648-1)

b. STE interface cable J2 (1356648-2)

c. STE interface cable J3 (1356648-3)

4. Connect STE interface cable J1 from EOS J1 found on the STE power panel shown in Figure 4 to the 25 pin breakout box. Connect the remaining end of the 25 pin breakout box to J1 of the instrument.

5. Connect STE interface cable J2 from EOS J2 found on the STE test panel shown in Figure 5 to J2 on the unit.

6. Connect STE interface cable J3 from EOS A&B J5 found on the STE interface panel shown in Figure 6 to J3 on the unit.

7. Before turning on the power to the unit, verify that switches 1, 2, 14, and 15 of the 25 pin breakout box are in the open position.

8. Disconnect the external power supply (PS1) from the 25 pin breakout box. Turn on the external supply and using a multimeter, adjust its output to 27 $\pm$ 0.10 volts. Turn off the external supply and reconnect the supply as shown in Figure 8.

9. Turn the STE main power switch on (refer to Figures 2 and 3 (computer should be on, STE power panel should be off)). From the A2 directory and at the "$" prompt, enter the command to the STE "RUN E2". The EOS/AMSU-A2 software program should be running as evidenced by the STE screen shown in Figure 9.

10. Turn the STE power supply panel main power switch on (refer to Figure 3).

11. Turn the external power supplies (PS1 and PS2) on. Place ON/OFF switch assembly to the ON position. With a multimeter, adjust the Quiet Bus voltage (PS1) at the breakout box to 27 $\pm$ 0.10 volts (between J1-1 and J1-3).

12. Turn the STE power supply panel N/Pulse switch on (refer to Figure 3). With a multimeter adjust the Noisy Bus voltage at the breakout box to 29 $\pm$ 0.10 volts (between J1-5 and J1-7).

13. Go to the Commands screen on the STE. From the main screen shown in Figure 9, enter the STE command "[2] MONITOR ONLY". The screen should now be as shown in Figure 10. Enter the STE command "[14] COMMANDS". The screen should now be as shown in Figure 11.

14. Enter the STE command "[10] ANTENNA FULL SCAN MODE". Wait 18 seconds before issuing the next command.

15. Enter the STE command "[9] SCANNER A2 POWER". The unit should now be scanning in warm cal mode.

16. Look at the Quiet Bus voltage. If necessary, using the multimeter adjust the external supply (PS1) to 27 $\pm$0.10 volts. Record the voltage on TDS 2.

17. Observe the Quiet Bus current waveform on the dynamic signal analyzer. Configure the dynamic signal analyzer as follows:

a. Select MEAS MODE

(1) Select TIME CAPTURE

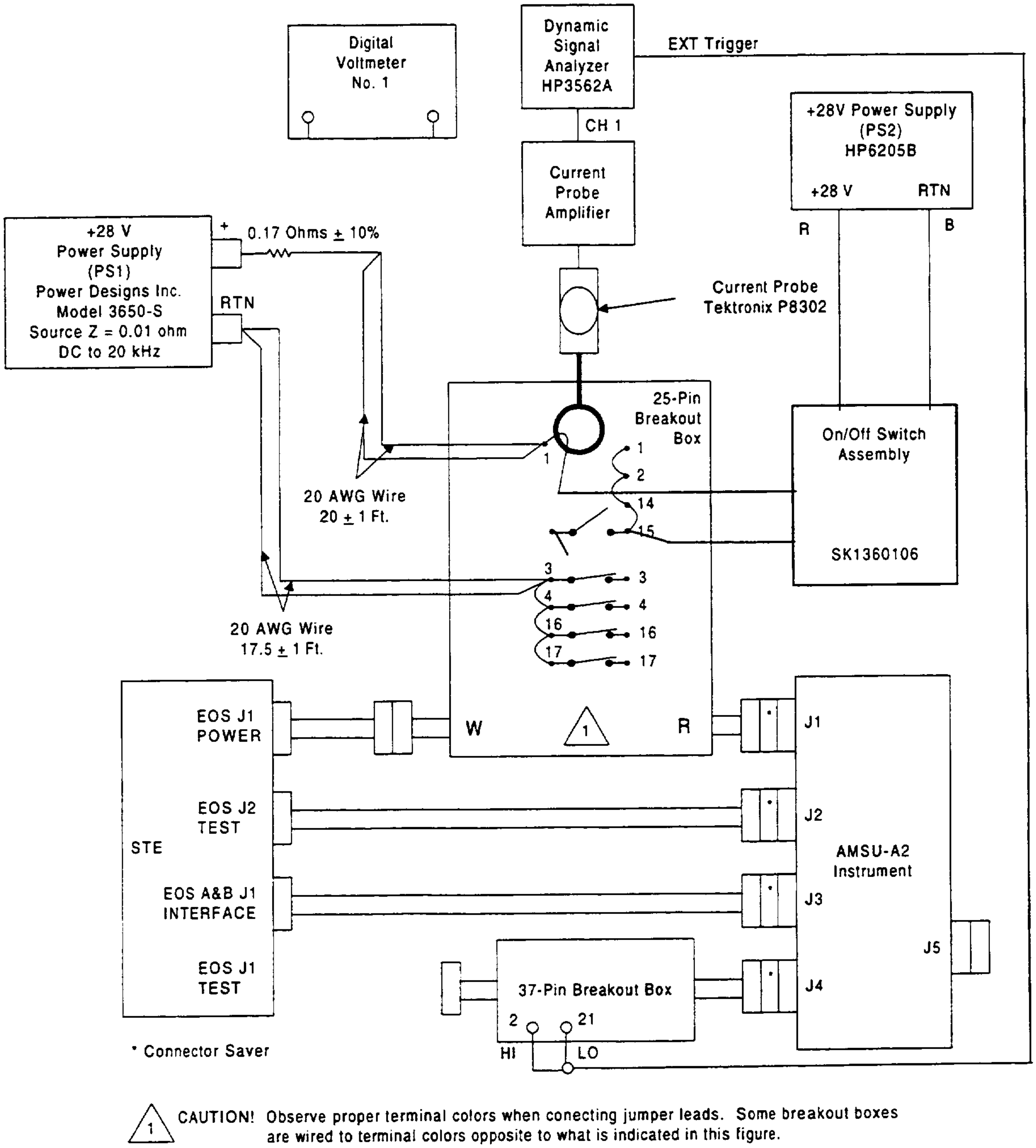


Figure 8. Setup for Quiet Bus Operational Power Tests

(2) Select CAPTURE SELECT.

(3) Select CAPTURE LENGTH. Enter 1.0 and select RECORD

b. Select FREQ

(1) Select FREQ SPAN. Enter 100.0 and select HZ.

(2) Select E SMPL then select OFF.

EOS/AMSU-A2 WHAT TYPE OF TEST?

[2] MONITOR ONLY	[13] FUNCTIONAL TEST
[3] WARM PATH CALIBRATION	[14] S/C TARGET TEST
[4] CYCLE 1 CALIBRATION	[15] ARCHIVE
[5] CYCLE 2 CALIBRATION	[16] INIT AZONIX
[6] CYCLE 3 CALIBRATION	
[7] SPECIAL CYCLE CALIBRATION	[10] SELF TEST
[8] DISK/TAPE PLAYBACK	[11] ID NUMBER XX
[9] ERROR MESSAGES	
	OFF [ ] POWER
	[1] RETURN
SELECT BUTTON	

Figure 9. EOS/AMSU-A2 STE Main Screen

EOS A2 - XX OB.A2] E2. 29-SEP-97 14:44:25 SCAN NUMBER
[5] SCIENCE DATA ELEMENT 0000
[6] CONTROL/STATUS ELEMENT 00
[7] ENGINEERINGELEMENT 00

[8] DELTA T BLOCK MONITOR DATA SELECT

[9] CALIBRATION TEST EQUIPMENT ERROR MESSAGES [15]

[10] SCIENCE DATA

[11] INSTRUMENT STATUS

[12] UNPOWERED THERMISTORS

[13] ENGINEERING DATA

[14] COMMANDS

POWER ON CHECKSUM IN CALC SA28 SA29
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT BUTTON

Figure 10. EOS/AMSU-A2 STE Monitor Only Screen

EOS A2 - XX OB.A2] E2. 29-SEP-97 14:44:25 SCAN NUMBER

[5] SCIENCE DATA	ELEMENT	0000
[6] CONTROL/STATUS	ELEMENT	00
[7] ENGINEERING	ELEMENT	00

COMMANDS

[9]	SCANNER A2 POWER	= OFF	COLD CAL POSITION	1	YES	[14]
[10]	ANTENNA FULL SCAN MODE	= NO		2	NO	[15]
[11]	WARM CAL	= NO		3	NO	[16]
[12]	COLD CAL	= NO	COLD CAL POSITION	4	NO	[17]
[13]	NADIR	= NO	RESET C&DH PROCESSOR			[18]
			GSE MODE			[19]

ENGR OK POWER ON CHECKSUM IN CALC SA28 SA29
SCREEN ONLY [2] PRINT [3] FULL [1] RETURN
SELECT BUTTON

Figure 11. EOS/AMSU-A2 STE Commands Screen

(3) Select TIME LENGTH. Enter 8.0 and select SEC.

c. Select SELECT MEAS

(1) Select POWER SPEC

(2) Select CH1 ACTIVE

d. Select WINDOW

(1) Select HANN

e. Select SOURCE

(1) Select SOURCE OFF

f. Select AVG

(1) Select AVG then OFF

(2) Select TIM AV then OFF

g. Select RANGE

(1) Select AUT 1 UP&DWN

h. Select INPUT COUPLE

(1) Select CH1 DC

(2) Select CH 1 Ground

i. Select SELECT TRIG

(1) Select TRIG LEVEL. Enter 1.5. Select V

(2) Select ARM AU

(3) Select EXT

(4) Select SLOPE +

j. Select TRIG DELAY

(1) Enter 0.0. Select SEC

k. Select COORD

(1) Select REAL

l. Select VIEW INPUT

(1) Select TIME BUFF

m. Select SCALE

(1) Select X Fixd Scale. Enter 0.0, 8.0. Select SEC

(2) Select Y Fixd Scale. Enter -10.0, 70.0. Select Mv

n. Select UNITS

(1) Select HZ (sec)

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA.

18. Perform zero reference on the current meter and DSA.

a. Remove the current probe from the circuit, close the probe, and depress the PROBE DEGAUSS AUTO BALANCE button on the current probe amplifier; wait for the red light to go out. Reattach current probe to circuit as shown in Figure 8.

b. Depress "Start Capture" on the DSA.

c. With the "capture in process", adjust the "output DC level" control on the current amplifier to indicate zero current on the DSA.

d. Position the current probe to its original location in accordance with Figure 8.

The instrument is now ready to capture and plot 8.0 seconds of data.

19. Start the DSA signal capture by depressing START CAPTURE. Ensure Relay Board is 'ON'.

20. Obtain a record of the Quiet Bus current waveform. On the Relay Board, turn the switch OFF.

21. Determine Average Power by the following: Observe the current waveform on the DSA. Using the Y markers, place the lower horizontal bar on the 0.0 ma line and the upper bar on the current trace, adjusting the bar to the middle of the signal. This measures the average current over the 8.0 second span. Multiply this value by the current scale factor (20 ma/mV) which yields Average Quiet Bus Current. Record on TDS 2. Record the PS-1 measured Quiet Bus Voltage on TDS 2. Multiply Voltage times the Current for the calculated Average Power. Record on TDS 2.

22. Determine Peak Power by the following: Observe the current wave form taken above. Sweep the x marker across the current wave form stopping on each narrow spike to see which has the highest amplitude. Upon finding the largest one, leave the x marker indicating the Peak Current Amplitude. Record this on TDS 2. Make a plot of this screen and attach it to TDS 2. Record the PS-1 measured Quiet Bus Voltage on TDS 2. Multiply the Voltage times the Peak current to obtain the Calculated Peak Power. Record this on TDS 2.

23. With the multimeter, adjust the external power supply PS1 to 29 ± 0.10 Vdc as measured between J1-1 (high) and J1-3 (low). Record this voltage on TDS 2.

24. Repeat steps 19 through 22.

25. With the multimeter, adjust the external power supply PS1 to 31 ± 0.10 Vdc as measured between J1-1 (high) and J1-3 (low). Record this voltage on TDS 2.

26. Repeat steps 19 through 22.

3.3.3.1.2 ***Quiet power bus operational power test (LPT only).***

1. Configure the unit as shown in Figure 12.

2. Breakout box at J1 should still be connected to the unit from the grounding interface testing of paragraph 3.3.2.

3. Connect the STE to the instrument using the following STE interface cables:

    a. STE interface cable J1 (1356648-1)

    b. STE interface cable J2 (1356648-2)

    c. STE interface cable J3 (1356648-3)

4. Connect STE interface cable J1 from EOS J1 found on the STE power panel shown in Figure 4 to the remaining end of the 25 pin breakout box connected to J1 on the unit.

5. Connect STE interface cable J2 from EOS J2 found on the STE test panel shown in Figure 5 to J2 on the unit.

6. Connect STE interface cable J5 from EOS A&B J1 found on the STE interface panel shown in Figure 6 to J3 on the unit.

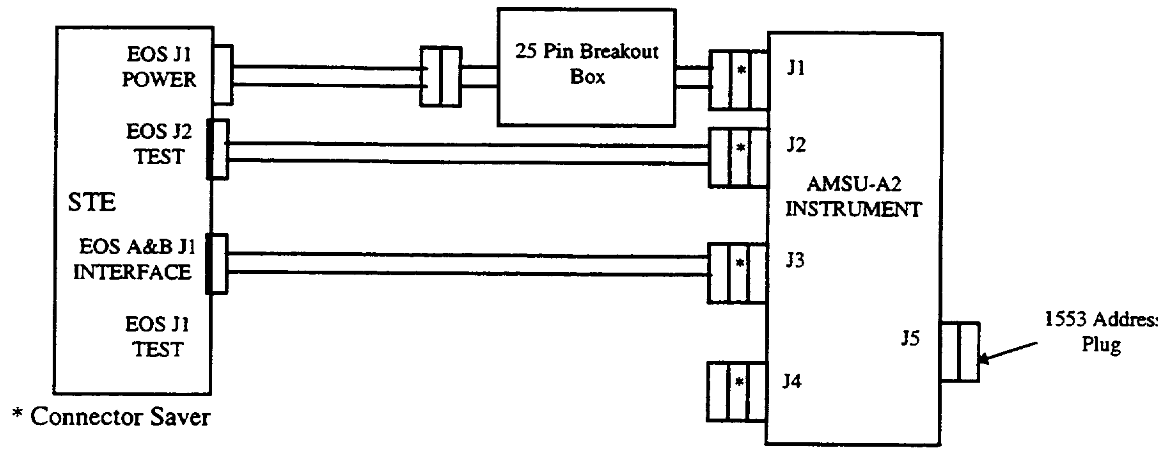


Figure 12. Test Setup of Unit Connected to STE

7. Turn the STE main power switch on (refer to Figures 2 and 3 (computer should be on, STE power panel should be off)). From the A2 directory and at the "$" prompt, enter the command to the STE "RUN E2". The EOS/AMSU-A2 software program should be running as evidenced by the STE screen shown in Figure 9.

8. Turn the STE power supply panel main power switch on (refer to Figure 3).

9. Turn the STE power supply panel Q/Main switch on (refer to Figure 3). With a multimeter adjust the Quiet Bus voltage at the breakout box to 29 $\pm$ 0.10 volts (between J1-1 and J1-3).

10. Turn the STE power supply panel N/Pulse switch on (refer to Figure 3). With a multimeter adjust the Noisy Bus voltage at the breakout box to 29 $\pm$ 0.10 volts (between J1-5 and J1-7).

11. Go to the Commands screen on the STE. From the main screen shown in Figure 9, enter the STE command "[2] MONITOR ONLY". The screen should now be as shown in Figure 10. Enter the STE command "[4] COMMANDS". The screen should now be as shown in Figure 11.

12. Enter the STE command "[10] ANTENNA FULL SCAN MODE". Wait 18 seconds before issuing the next command.

13. Enter the STE command "[9] SCANNER A2 POWER".

14. Look at the Quiet Bus voltage. If necessary, using the multimeter adjust the external supply to 29 $\pm$ 0.10 volts. Record the voltage and current on TDS 3. The current is read directly from the Q/Main power supply panel meter.

15. Compute the operating power in watts on TDS 3 using the equation provided on TDS 3.

16. Turn the STE power supply panel N/Pulse switch off (refer to Figure 3).

17. Turn the STE power supply panel Q/Main switch off (refer to Figure 3).

18. Turn the STE power supply panel main power switch off (refer to Figure 3).

19. Leave the setup intact for paragraph 3.3.4 testing.

3.3.3.1.3 ***Quiet power bus turn on transient test.*** The Quiet Power Bus turn on transient shall be verified at +31 volts as follows:

1. The setup should be intact from paragraph 3.3.3.1.1 testing.

2. Verify the external power supply (PSI) is adjusted to 31 ± 0.1 Vdc then make appropriate adjustments.

3. Configure the Dynamic Signal Analyzer (DSA) as follows:

   a. Select MEAS MODE

      (1) Select TIME CAPTURE

      (2) Select CAPTURE SELECT

      (3) Select CAPTURE LENGTH. Enter 80.0. Select msec

   b. Select FREQ

      (1) Select FREQ SPAN. Enter 100.0. Select KHz

      (2) Select E SMPL OFF

      (3) Select TIME LENGTH. Enter 80.0. Select MSEC

   c. Select SELECT MEAS

      (1) Select POWER SPEC

      (2) Select CH1 ACTIVE

   d. Select WINDOW

      (1) Select HANN

   e. Select SOURCE

      (1) Select SOURCE OFF

   f. Select AVG

      (1) Select AVG OFF

      (2) Select TIM AV OFF

   g. Select RANGE

      (1) Select CHAN 1 RANGE. Enter 1. Select V

   h. Select INPUT COUPLE

      (1) Select CH1 DC

(2) Select CH 1 GROUND

i. Select INPUT TRIG

(1) Select TRIG LEVEL. Enter 100. Select MV

(2) Select ARM AU

(3) Select CHAN 1 INPUT

(4) Select SLOPE +

j. Select TRIG DELAY

(1) Enter 0.0. Select SEC

k. Select COORD

(1) Select REAL

l. Select VIEW INPUT

(1) Select TIME BUFF

m. Select SCALE

(1) Select X FIXD SCALE. Enter 0.0, 80.0. Select MSEC

(2) Select Y FIXD SCALE. Enter 0, 480. Select MV

n. Select UNITS

(1) Select HZ (SEC)

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA.

4. Perform zero reference on the current meter and DSA.

a. Remove the current probe from the circuit and close the probe. Place the probe in a magnetic benign location.

b. Depress START CAPTURE on the DSA.

c. With the "capture in process", adjust the OUTPUT DC LEVEL control on the current amplifier to indicate zero current on the DSA.

d. Position the current probe to it's original location in accordance with Figure 8.

5. Adjust PS2 for +28 Vdc.

6. Start the DSA signal capture by depressing START CAPTURE, wait for the DSA message "waiting for trigger" before proceeding.

7. On the Relay Board, turn the switch ON and obtain a record of the Quiet Bus Turn on current waveform. On the Relay Board, turn the switch OFF. Adjust the display time base and voltage sensitivity to allow for adequate current and pulse duration measurements. Plot the obtained waveform and attach a hard copy of the scan to TDS 4.

8. Measure the Turn On pulse width; record this value on TDS 4. See Figure 13 (A and B).

9. Compute the peak current as follows:

   Multiply the maximum Ya value by the current/div as selected on the current amplifier. As an example: if the current amplifier is set up to display 200 ma/10 mV per division, and the maximum Ya value = 276mV, then

   276 mV x (200 ma/10 mV) = 5520 ma = 5.52 amps

   Record this value on TDS 4.

10. The 1st derivative of the current waveform must be calculated. Compute the dI/dT as follows:

   The most probable location of the greatest current demand is during the first positive transition after voltage application. If this is the case, expand that segment of the display and measure the greatest voltage transition in the smallest time transition. The change in voltage times the current/div as selected on the current amplifier produces the change in current. Next divide this change in current by the change in time (in microseconds). This value is dI/dT. Example:

Change in voltage	144 mV
Change in time (microseconds)	19.5 μs
Current/div on current amp	200 ma/ 10mV

   144 mV x (200 ma/10 mV) / 19.5 μs = 147.7 ma per μs

11 Record the computed value on TDS 4.

12. With the multimeter, adjust the external power supply PS1 to 29 ± 0.10 Vdc as measured between J1-1 (high) and J1-3 (low).

13. Repeat steps 3 through 11.

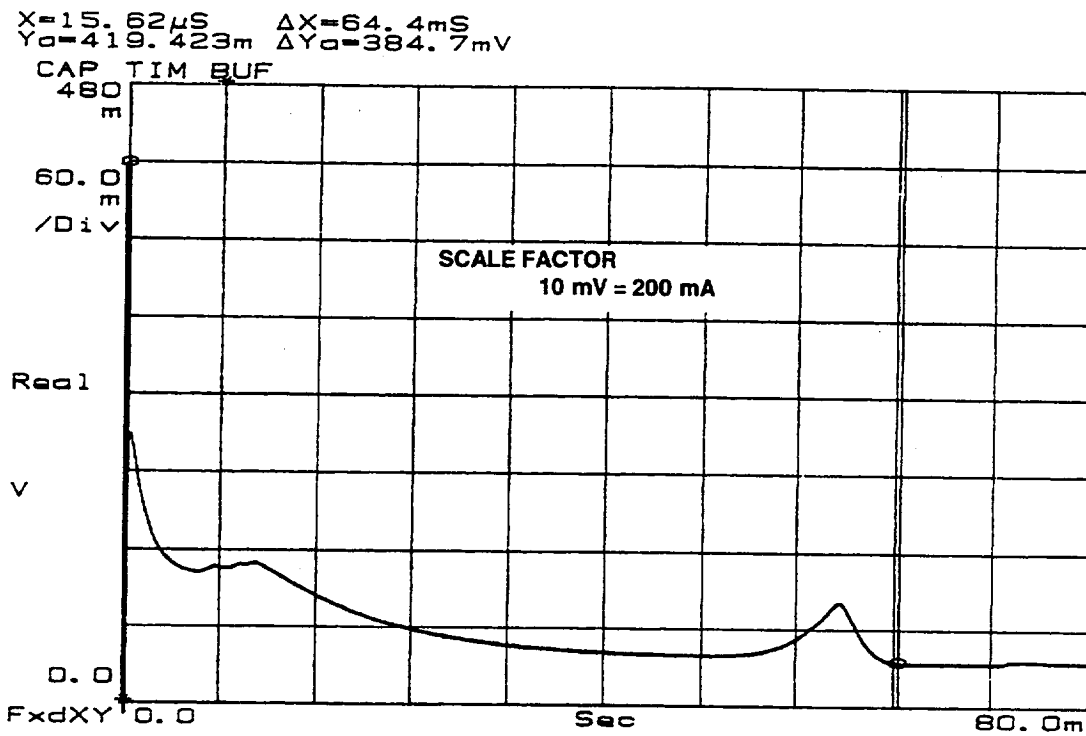
14. With the multimeter, adjust the external power supply PS1 to 27 ± 0.10 Vdc as measured between J1-1 (high) and J1-3 (low).

15. Repeat steps 3 through 11.

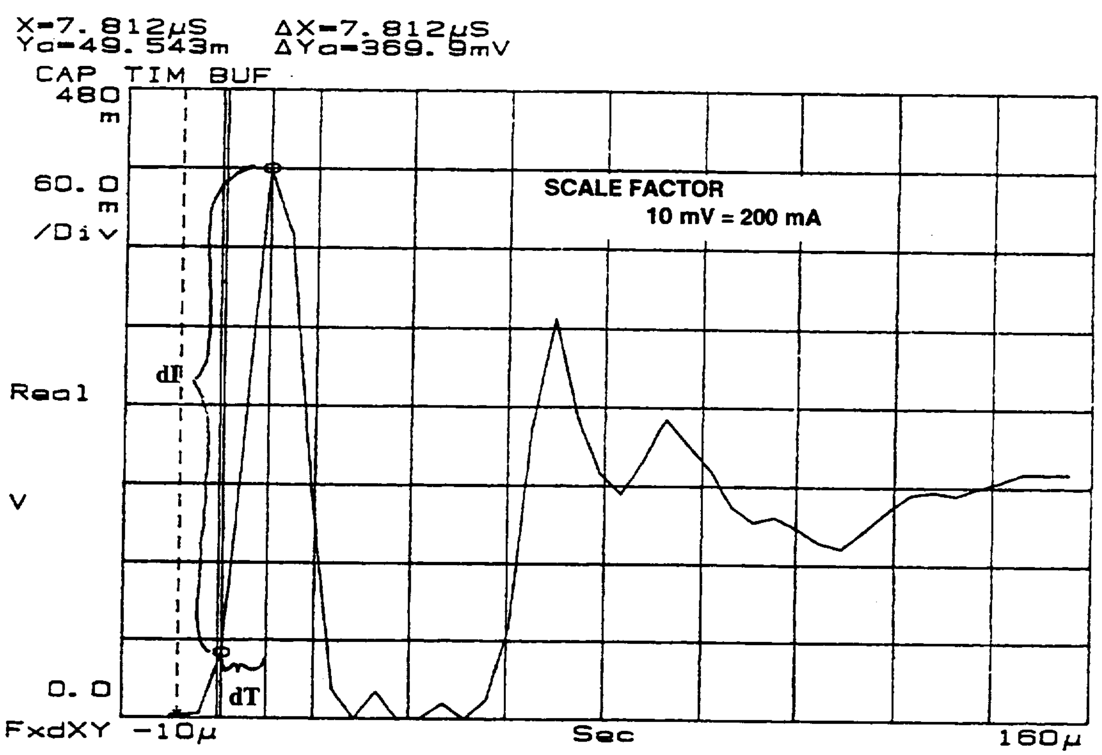
16. Turn the STE power supply panel N/PULSE switch OFF (refer to Figure 3).

17. Turn the STE power supply panel main power switch OFF (refer to Figure 3.).

3.3.3.2 ***Noisy power bus interface tests.*** The noisy bus is not active upon the introduction of spacecraft power to the bus. The A2 scan drive relay must be turned on before the noisy bus is active within the unit. The noisy bus shall be verified by performing the following tests:



A. Typical Quiet Bus Turn On Transient



B. Typical Quiet Bus Turn On Expanded

Figure 13. Typical Quiet Bus Turn On Transient

1. Noisy power bus operational power test (3.3.3.2.1)

2. Noisy power bus turn on transient test (3.3.3.2.2)

3.3.3.2.1 ***Noisy power bus operational power test.*** The Noisy Power Bus operational power shall be verified at combinations of three voltages (+27, +29, and +31 volts). The operational power test will be conducted for the unit in full scan mode as follows:

1. With the STE main power off and the STE power panel turned off (main power, Q/Main, N/Pulse, and S/Analog switches as shown in Figure 3 in the off position), connect the instrument as shown in Figure 14. This setup assumes a dc impedance from the spacecraft supplied power through fuse and cabling to the unit on the order of 0.3 ohms.

2. Before turning on the power to the unit, verify that switches 5, 6, 18, and 19 of the 25 pin breakout box are in the open position.

3. Disconnect the external power supply (PS1) from the 25 pin breakout box. Turn on the external supply (PS1) and using a multimeter, adjust its output to 27 $\pm$ 0.10 volts. Turn off the external supply and reconnect the supply as shown in Figure 14.

4. Turn the STE main power switch on (refer to Figures 2 and 3 (computer should be on, STE power panel should be off)). From the A2 directory and at the "$" prompt, enter the command to the STE "RUN E2". The EOS/AMSU-A2 software program should be running as evidenced by the STE screen shown in Figure 9.

5. Turn the STE power supply panel main power switch on (refer to Figure 3).

6. Turn the STE power supply panel Q/Main switch on (refer to Figure 3). With a multimeter adjust the Quiet Bus voltage at the breakout box to 29 $\pm$ 0.10 volts (between J1-1 and J1-3).

7. Turn the external power supplies (PS1 and PS2) on. Place ON/OFF switch assembly in the ON position. With a multimeter adjust the Noisy Bus voltage (PS1) at the breakout box to 27 $\pm$ 0.10 volts (between J1-5 and J1-7).

8. Go to the Commands screen on the STE. From the main screen shown in Figure 9, enter the STE command "[2] MONITOR ONLY". The screen should now be as shown in Figure 10. Enter the STE command "[14] COMMANDS". The screen should now be as shown in Figure 11.

9. Enter the STE command "[10] ANTENNA FULL SCAN MODE". Wait 18 seconds before issuing the next command.

10. Enter the STE command "[9] SCANNER A2 POWER". The unit should now be scanning in full scan mode.

11. Look at the Noisy Bus voltage. If necessary, using the multimeter adjust the external supply to 27 $\pm$ 0.10 volts. Record the voltage on TDS 5.

12. Observe the Noisy Bus current waveform on the dynamic signal analyzer. Configure the dynamic signal analyzer as follows:

    a. Select MEAS MODE

        (1) Select TIME CAPTURE

        (2) Select CAPTURE SELECT

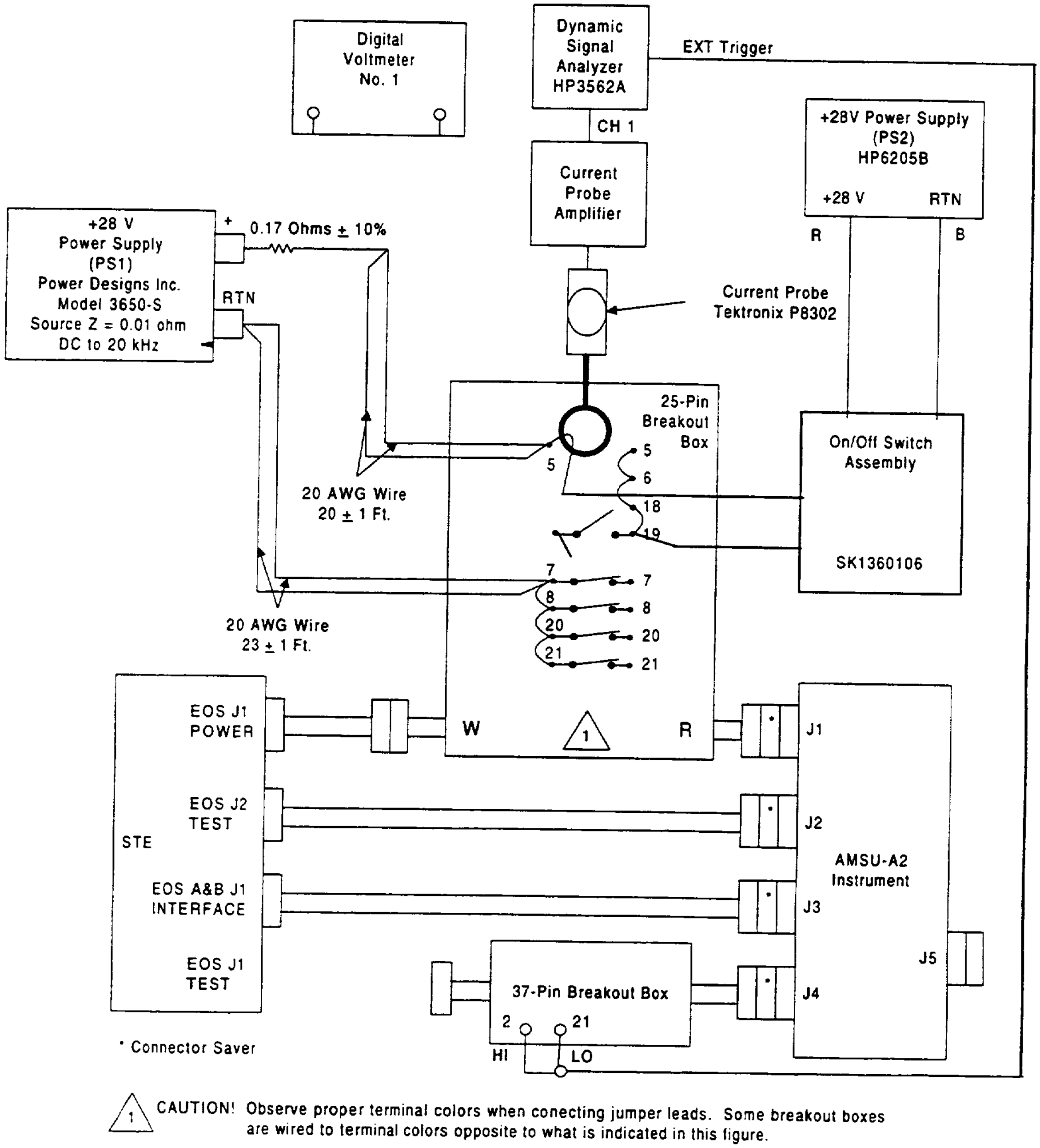


Figure 14. Setup for Noisy Bus Operational Power Tests

(3) Select CAPTURE LENGTH. Enter 1.0. Select RECORD

b. Select FREQ

(1) Select FREQ SPAN. Enter 100.0. Select Hz

(2) Select E SMPL OFF

(3) Select TIME LENGTH. Enter 8.0. Select SEC

c. Select SELECT MEAS

(1) Select POWER SPEC

(2) Select CH1 ACTIVE

d. Select WINDOW

(1) Select HANN

e. Select SOURCE

(1) Select SOURCE OFF

f. Select AVG

(1) Select AVG OFF

(2) Select TIM AV OFF

g. Select RANGE

(1) Select AUT 1 UP&DWN

h. Select INPUT COUPLE

(1) Select CH1 DC

(2) Select CH 1 GROUND

i. Select SELECT TRIG

(1) Select TRIG LEVEL. Enter 1.5. Select V

(2) Select ARM AU

(3) Select EXT

(4) Select SLOPE +

j. Select TRIG DELAY

(1) Enter 0.0. Select SEC

k. Select COORD

(1) Select REAL

l. Select VIEW INPUT

(1) Select TIME BUFF

m. Select SCALE

(1) Select X FIXD SCALE. Enter 0.0, 8.0. Select SEC

(2) Select Y FIXD SCALE. Enter -10.0, 70.0. Select MV

n. Select UNITS

(1) Select HZ (SEC)

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA.

13. Perform zero reference on the current meter and DSA.

a. Remove the current probe from the circuit and close the probe. Place the probe in a magnetic benign location.

b. Depress START CAPTURE on the DSA.

c. With the "capture in process", adjust the OUTPUT DC LEVEL control on the current amplifier to indicate zero current on the DSA.

d. Position the current probe to it's original location in accordance with Figure 14.

The instrument is now ready to capture and plot 8.0 seconds of data.

14. Start the DSA signal capture by depressing START CAPTURE.

15. Obtain a record of the Noisy Bus current waveform. On the Relay Board, turn the switch OFF. Using the Y markers, mark the maximum current amplitude as indicated in Figure 15. Plot the obtained waveform and attach a hard copy of the scan to TDS 5.

16. Examine the expanded waveform to find the peak current over the entire 8.0 second scan. Record the peak current on TDS 5.

17. Calculate the Average Noisy Bus current as follows:

a. Select VIEW INPUT

(1) Select TIME RECORD

NOTE

The display shows the first 8 seconds of data and the heading changes to read "Cap Tim Rec".

b. Select MATH

(1) Select NEXT

(2) Select INTGRT

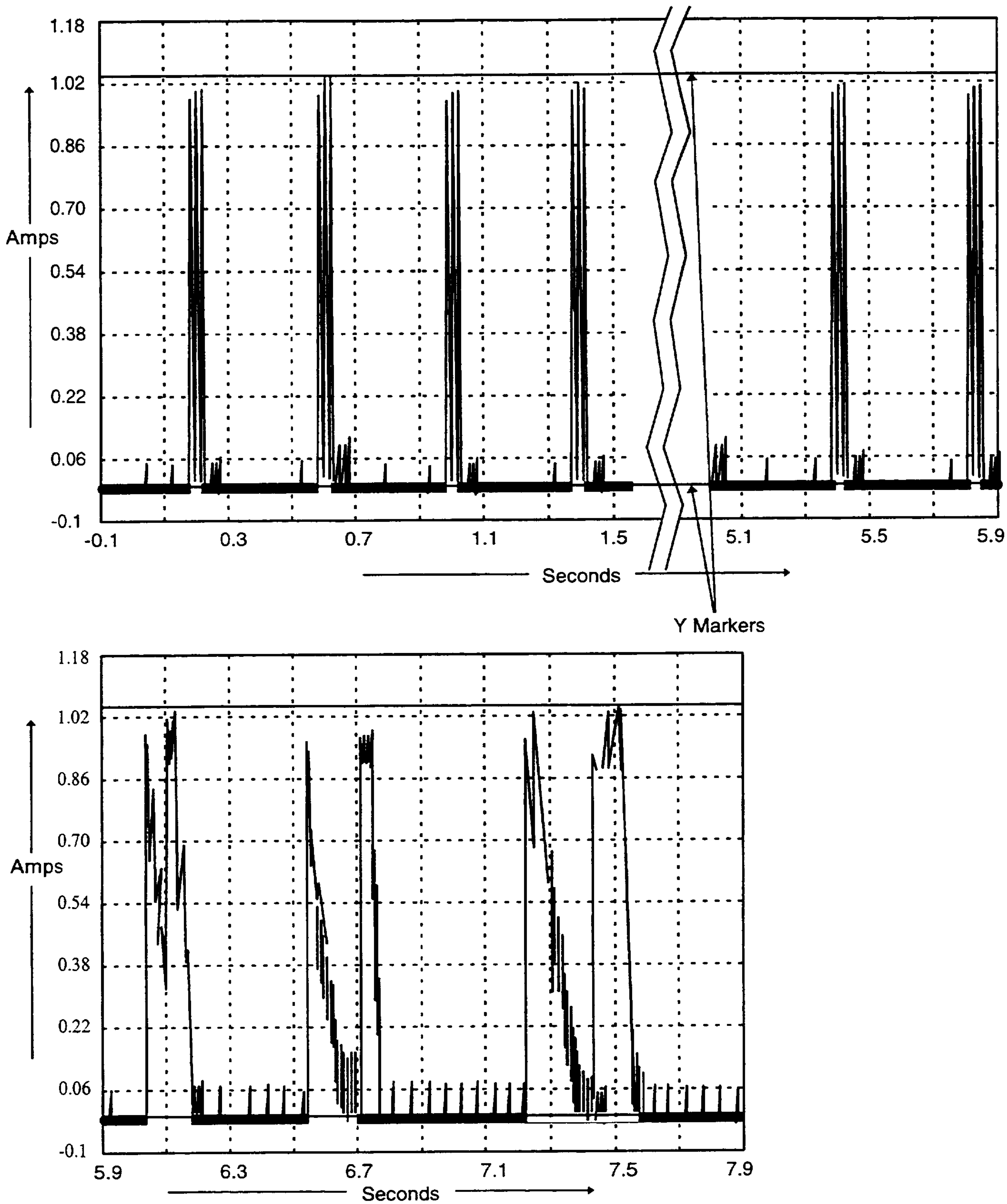


Figure 15. Typical Noisy Power Bus Current Waveform

NOTE

The display changes to present an integrated value of the current waveform.

c. Select X. Move the X marker to the maximum right of the display. The Y value is indicative of the integrated current value over the entire 8 second period. Plot this waveform and attach a hard copy of the scan to TDS 5.

d. Multiply the maximum Y value by the current/div as selected on the current amplifier, then divide by 8 seconds to acquire an average current/second value. As an example: if the current amplifier is set up to display 200 ma/10 mV per division, and the maximum Y value = 32.4 mV, then

$$[\ 32.4 \text{ mV} \times (200 \text{ ma}/10 \text{ mV})\ ] / 8 \text{ sec} = 81 \text{ ma/sec}$$

Record this value on TDS 5.

18. Compute the operating peak and average power in watts from the measured values in steps 16 and 17 above. Record the computed values on TDS 5. Compute noisy bus current during the integrate/hold dump (I/H,D) time period. (Refer to Figure 15). Record the data on TDS 5.

19. With the multimeter, adjust the external power supply PS1 to 29 ± 0.10 Vdc as measured between J1-5 (high) and J1-7 (low). Record this voltage on TDS 5.

20. Repeat steps 12 through 18.

21. With the multimeter, adjust the external power supply PS1 to 31 ± 0.10 Vdc as measured between J1-5 (high) and J1-7 (low). Record this voltage on TDS 5.

22. Repeat steps 12 through 18.

3.3.3.2.2 ***Noisy power bus turn on transient test.*** The Noisy Power Bus turn on transient shall be verified at +31, +29, and +27 volts as follows:

1. The setup should be intact from paragraph 3.3.3.2.1 testing.

2. Verify the external power supply (PSI) is adjusted to 31 ± 0.1 Vdc (if not, then make appropriate adjustments) and the unit is in Warm Cal position.

3. Configure the Dynamic Signal Analyzer (DSA) as follows:

   a. Select MEAS MODE

      (1) Select TIME CAPTURE

      (2) Select CAPTURE SELECT

      (3) Select CAPTURE LENGTH. Enter 80.0. Select msec

   b. Select FREQ

      (1) Select FREQ SPAN. Enter 100.0. Select KHz

      (2) Select E SMPL OFF

(3) Select TIME LENGTH. Enter 8.0. Select MSEC

c. Select SELECT MEAS

(1) Select POWER SPEC

(2) Select CH1 ACTIVE

d. Select WINDOW

(1) Select HANN

e. Select SOURCE

(1) Select SOURCE OFF

f. Select AVG

(1) Select AVG OFF

(2) Select TIM AV OFF

g. Select RANGE

(1) Select CHAN 1 RANGE. Enter 1. Select V

h. Select INPUT COUPLE

(1) Select CH1 DC

(2) Select CH 1 GROUND

i. Select INPUT TRIG

(1) Select TRIG LEVEL. Enter 100. Select MV

(2) Select ARM AU

(3) Select CHAN 1 INPUT

(4) Select SLOPE +

j. Select TRIG DELAY

(1) Enter 0.0. Select SEC

k. Select COORD

(1) Select REAL

l. Select VIEW INPUT

(1) Select TIME BUFF

m. Select SCALE

(1) Select X FIXD SCALE. Enter 0.0, 80.0. Select MSEC

(2) Select Y FIXD SCALE. Enter 0, 800.0. Select MV

n. Select UNITS

(1) Select HZ (SEC)

NOTE

Prior to collecting any current data, the current meter and DSA have to be "zeroed out"; zero current reference has to be established on the DSA.

4. Perform zero reference on the current meter and DSA.

a. Remove the current probe from the circuit and close the probe. Place the probe in a magnetic benign location.

b. Depress START CAPTURE on the DSA.

c. With the "capture in process", adjust the OUTPUT DC LEVEL control on the current amplifier to indicate zero current on the DSA.

d. Position the current probe to it's original location in accordance with Figure 14.

5. Adjust PS2 for +28 Vdc.

6. Start the DSA signal capture by depressing START CAPTURE, wait for the DSA message "waiting for trigger" before proceeding.

7. On the Relay Board, turn the switch ON and obtain a record of the Noisy Bus Turn on current waveform. On the Relay Board, turn the switch OFF. Adjust the display time base and voltage sensitivity to allow for adequate current and pulse duration measurements. Plot the obtained waveform and attach a hard copy of the scan to TDS 6.

8. Measure the Turn On pulse width; record this value on TDS 6 (see Figure 16).

9. Compute the peak current as follows:

Multiply the maximum Y value by the current/div as selected on the current amplifier. As an example: if the current amplifier is set up to display 200 ma/10 mV per division, and the maximum Y value = 276mV, then

276 mV x (200 ma/10 mV) = 5520 ma = 5.52 amps

Record this value on TDS 6.

10. The 1st derivative of the current waveform must be calculated. Compute the dI/dT as follows:

The most probable location of the greatest current demand is during the first positive transition after voltage application. If this is the case, expand that segment of the display and measure the greatest voltage transition in the smallest time transition. The change in voltage times the current/

div as selected on the current amplifier produces the change in current. Next divide this change in current by the change in time (in microseconds). This value is dI/dT. Example:

Change in voltage	144 mV
Change in time (microseconds)	19.5 μs
Current/div on current amp	200 ma/10 mV

144 mV x (200 ma/10 mV) / 19.5 μs = 147.7 ma per μs

11. Record the computed value on TDS 6.

12. With the multimeter, adjust the external power supply PS1 to 29 ± 0.10 Vdc as measured between J1-5 (high) and J1-7 (low).

13. Repeat steps 3 through 11.

14. With the multimeter, adjust the external power supply PS1 to 27 ± 0.10 Vdc as measured between J1-5 (high) and J1-7 (low).

15. Repeat steps 3 through 11.

16. Turn the STE power supply panel Q/MAIN switch OFF (refer to Figure 3).

17. Turn the STE power supply panel main power switch OFF (refer to Figure 3.).

3.3.3.3 ***Survival heater power bus interface tests.*** The operational characteristics of the redundant survival buses A and B shall be verified during ambient thermal cycle testing using test procedure AE-26151/9. For final CPT, attach data sheet from Survival Heater test to this data package.

3.3.4 ***Passive analog interface test.*** This test provides the verification of the passive analog telemetry requirements found in the following documents:

UIID	None
GIRD	Sections 4.5.2, 4.5.3, and 6.3
POS	Section 4.6.3.6 (8)
ICD	Sections 4.5 and 6.3

Passive analog telemetry signals are output from the unit through the spacecraft interface connector J2. To verify these signals, perform the following procedures:

1. The unit should be configured as shown in Figure 12. Turn the STE main power switch on (computer should be on, STE power panel should be off. From the A2 directory and at the "$" prompt, enter the command to the STE "RUN E2". The EOS/AMSU-A2 software program should be running as evidenced by the STE screen shown in Figure 9.

2. Enter the STE command "[2] MONITOR ONLY". The screen should now be as shown in Figure 10.

3. Enter the STE command "[12] UNPOWERED THERMISTORS". The screen should now be as shown in Figure 17.

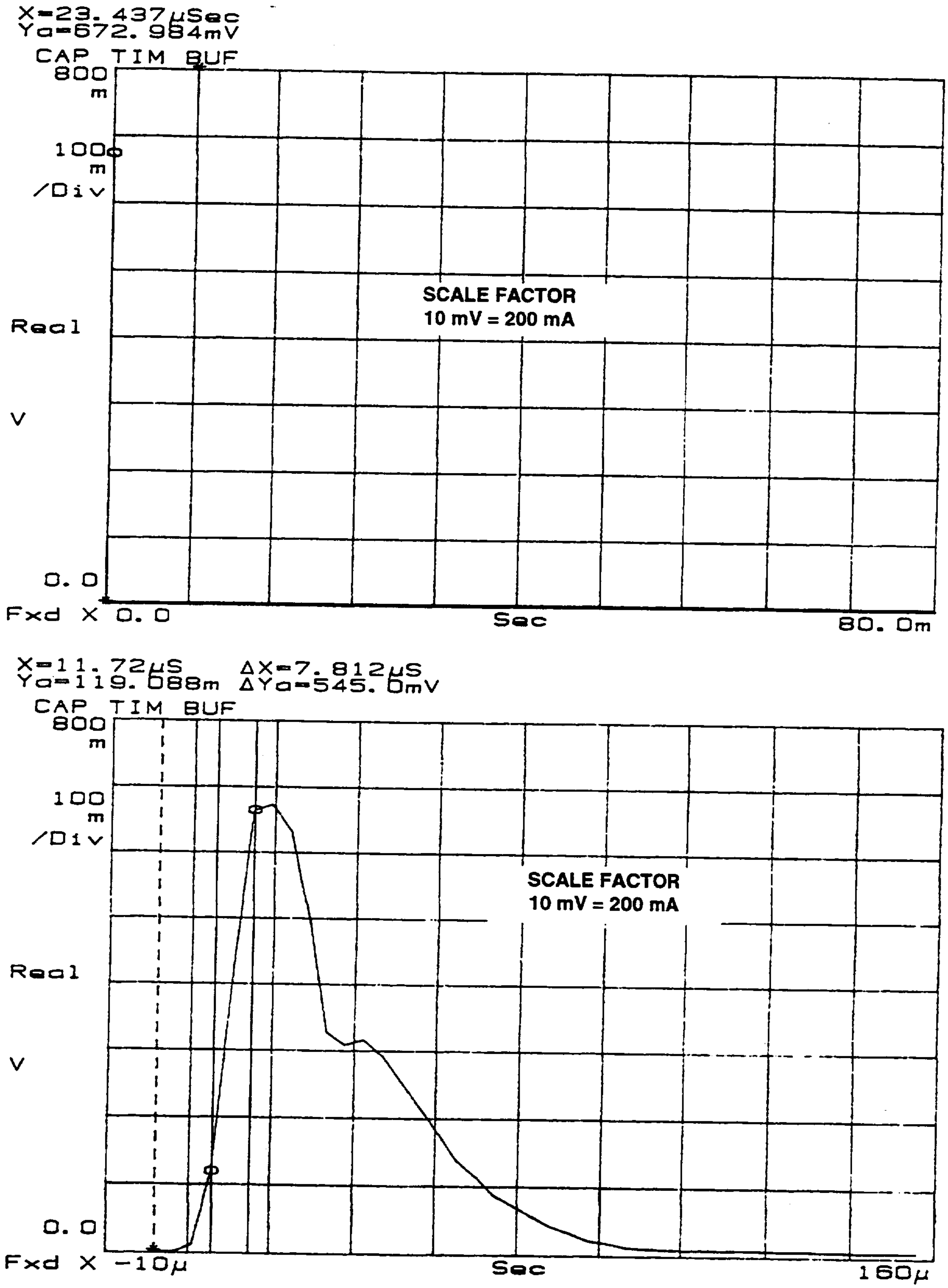


Figure 16. Typical Worst Case Noisy Power Bus Turn On Transient Waveforms

```
          EOS   A2 - XX  OB.A2] E2.                    29-SEP-97  14:44:25  SCAN NUMBER
     [ 5 ] SCIENCE DATA          ELEMENT         0000

     [ 6 ] CONTROL/STATUS     ELEMENT           00

     [ 7 ] ENGINEERINGELEMENT            00

                                       UNPOWERED THERMISTORS
          NO                                 DATA                              TEMP C


           1                  A2 SCAN MOTOR TEMPERATURE                  23.50
           2                  A2 RF SHELF TEMPERATURE  #1                20.00
           3                  A2 WARM LOAD TEMPERATURE                   20.30
           4                  A2 RF SHELF TEMPERATURE  #2                20.05



          POWER   ON    CHECKSUM  IN              CALC           SA28                  SA29
                  SCREEN ONLY  [ 2 ]  PRINT  [ 3 ]  FULL            [ 1 ]  RETURN
     SELECT BUTTON
```

Figure 17. EOS/AMSU-A2 STE Unpowered Thermistors Screen

4. The thermistor data should update every 8 seconds. Enter STE command "[2]" to print the screen. Enter the data on TDS 7 and attach the printout to TDS 7.

3.3.5 ***Command and data handling bus interface test***

3.3.5.1 ***Formal qualification test of the EOS/AMSU-A2 firmware (protoflight model 1st CPT only.*** On 3/21/97, an initial Formal Qualification Test (FQT) of the EOS AMSU-A firmware was conducted using Test Procedure AE-26600 (CDRL 415). The results of that test were documented in Report 10974 (CDRL 217). As stated in that report, a final FQT would be performed as a part of the initial instrument CPT for the EOS protoflight models A1 and A2 to validate the firmware requirements (Report 10458, CDRL 306-2b) which could not be validated during the initial FQT. The purpose of this test is to perform that validation by repeating Test Procedure AE-26600 and conducting additional system level testing with the unit connected to the Special Test Equipment (STE). At the conclusion of paragraph 3.3.5 testing, the firmware will be validated. Perform Test Procedure AE-26600 with the following clarifications:

1. Paragraph 4.1 Load bonded Software - the last half of the paragraph beginning with "The tape labeled N7 ..." to the end of the paragraph should be ignored because the unit configuration uses flight CCAs.

2 Paragraph 4.2 Configure the test environment - Replace this paragraph with the instructions provided in paragraph 3.3.5.2 steps 1 through 9 of this procedure.

3. Paragraph 4.4.4 c thru l. These tests are replaced by section 3.3.5.3 of this procedure.

3.3.5.2 ***Instrument commanding test.*** This test provides the verification of the instrument commanding capability. Each of the commands shown in Table III with the exception of [19] GSE Modes will be sent to the unit and verified that it was received and carried out by the unit. GSE Modes will be verified during test point interface testing (paragraph 3.3.6). Perform the following procedures.

1. Configure the unit as shown in Figure 12. If the unit is already configured, skip to step 7.

Table III. EOS/AMSU-A2 Instrument Commands

STE Command Screen Number	STE Command	Instrument Status
[9]	Scanner A2 Power	ON / OFF
[10]	Antenna Full Scan Mode	YES / NO
[11]	Antenna Warm Cal Mode	YES / NO
[12]	Antenna Cold Cal Mode	YES / NO
[13]	Antenna Nadir Mode	YES / NO
[14]	Cold Cal Position 1	YES / NO
[15]	Cold Cal Position 2	YES / NO
[16]	Cold Cal Position 3	YES / NO
[17]	Cold Cal Position 4	YES / NO
[18]	Reset C&DH Processor	Resets1553 firmware
[19]	GSE Modes	YES / NO

2. Connect a 25 pin breakout box to J1 of the instrument.

3. Connect the STE to the instrument using the following STE interface cables:

   a. STE interface cable J1 (1356648-1)

   b. STE interface cable J2 (1356648-2)

   c. STE interface cable J3 (1356648-3)

4. Connect STE interface cable J1 from EOS J1 found on the STE power panel shown in Figure 4 to the remaining end of the 25 pin breakout box connected to J1 on the unit.

5. Connect STE interface cable J2 from EOS J2 found on the STE test panel shown in Figure 5 to J2 on the unit.

6. Connect STE interface cable J3 from EOS A&B J1 found on the STE interface panel shown in Figure 6 to J3 on the unit.

7. Turn the STE main power switch on (refer to Figures 2 and 3 (computer should be on, STE power panel should be off)). From the A2 directory and at the "$" prompt, enter the command to the STE "RUN E2". The EOS/AMSU-A2 software program should be running as evidenced by the STE screen shown in Figure 9.

8. Turn the STE power supply panel Q/Main switch on (refer to Figure 3). With a multimeter adjust the Quiet Bus voltage at the breakout box to 29 $\pm$ 0.10 volts (between J1-1 and J1-3).

9. Turn the STE power supply panel N/Pulse switch on (refer to Figure 3). With a multimeter adjust the Noisy Bus voltage at the breakout box to 29 $\pm$ 0.10 volts (between J1-5 and J1-7).

10. Go to the Commands screen on the STE. From the main screen shown in Figure 9, enter the STE command "[2] MONITOR ONLY". The screen should now be as shown in Figure 10. Enter the STE command "[14] COMMANDS". The screen should now be as shown in Figure 11.

11. The instrument commands shown in Table III are now ready to be tested.

12. Enter the STE command "[9] SCANNER A2 POWER". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO(OFF) to YES(ON)). The scan motor should now be scanning. Record the status on TDS 8.

13. Enter the STE command "[10] ANTENNA FULL SCAN MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES). Record the status on TDS 8.

14. Enter the STE command "[9] SCANNER A2 POWER". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from YES(ON) to NO(OFF)). The scan motor should stop scanning. Record the status on TDS 8.

15. Enter the STE command "[9] SCANNER A2 POWER". Look at the commands screen to see that the command was received by the instrument (the state of the command should go from NO(OFF) to YES(ON)). The motor should now be scanning. Record the status on TDS 8.

16. Enter the STE command "[11] ANTENNA WARM CAL MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES and the state of ANTENNA IN FULL SCAN MODE should go from YES to NO). The motor should have moved to the warm calibration position. Record the status on TDS 8.

17. Enter the STE command "[13] ANTENNA NADIR MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES and the state of ANTENNA WARM CAL MODE should go from YES to NO). The motor should have moved to the nadir position. Record the status on TDS 8.

18. Enter the STE command "[12] ANTENNA COLD CAL MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES and the state of ANTENNA NADIR MODE should go from YES to NO). The motor should have moved to the cold calibration 1 position (LSB=0, MSB=0). Record the status on TDS 8.

19. Enter the STE command "[17] COLD CAL POSITION 4". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES. Also, the state of ANTENNA COLD CAL MODE should stay YES). The motor should have moved slightly to the cold calibration 4 position. Record the status on TDS 8.

20. Enter the STE command "[16] COLD CAL POSITION 3". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES. Also, the state of ANTENNA COLD CAL MODE should stay YES). The motor should have moved slightly to the cold calibration 3 position. Record the status on TDS 8.

21. Enter the STE command "[15] COLD CAL POSITION 2". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES. Also, the

state of ANTENNA COLD CAL MODE should stay YES). The motor should have moved slightly to the cold calibration 2 position. Record the status on TDS 8.

22. Enter the STE command "[14] COLD CAL POSITION 1". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES. Also, the state of ANTENNA COLD CAL MODE should stay YES). The motor should have moved slightly to the cold calibration 1 position. Record the status on TDS 8.

23. Enter the STE command "[18] RESET C&DH PROCESSOR". Look at the bottom of the commands screen to see that SA28 resets and starts counting from 1. Record the status on TDS 8.

24. Leave the unit powered and the setup intact for paragraph 3.3.5.3 testing.

3.3.5.3 ***Science and Engineering Data Verification.*** The engineering data in the engineering packet is also found embedded in the science data packet. The STE does a comparison between the data in the engineering packet and the same data located in the science data packet. If there is total agreement between the two data sets then a message "ENGR OK" appears at the bottom of the STE screen. Because of the fact that the two packets agree with respect to engineering data, this test validates both science and engineering data by verifying the data in the science data packet for each of the following instrument modes (look at engineering data, also unpowered thermistors prior to starting these modes):

1. Full Scan Mode (3.3.5.3.1)

2. Warm Cal Mode (3.3.5.3.2)

3. Cold Cal Mode (3.3.5.3.3)

4. Nadir Mode (3.3.5.3.4)

3.3.5.3.1 ***Full scan mode.*** The full scan mode science and engineering data is verified as follows:

1. From the STE command screen shown in Figure 11, enter the STE command "[10] ANTENNA FULL SCAN MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES). Record the status on TDS 9.

2. Look to see that "ENGR OK" message is displayed in bottom left corner of screen. Record the status on TDS 9.

3. Look to see that the unit is operating in full scan mode. Enter the observed result on TDS 9.

4. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 9.

   a. Packet ID (elements 1 and 2, page 1 of printout)

   b. Packet length (elements 3 and 4, page 1 of printout)

   c. Unit serial number (elements 5 and 6, page 1 of printout)

   d. Instrument mode/status (elements 7 and 8, page 1 of printout)

   e. Reflector positions (use data from procedure AE-26002/2 TDS 6 for required position data for warm cal position) (pages 1 and 2 of printout)

   f. Radiometer scene data (pages 1 and 2 of printout)

g. PRT temperature data (elements 262 - 300, page 2 of printout)

h. Status (page 3 of printout)

i. Engineering data (page 3 of printout)

5. Attach the printout to TDS 9.

3.3.5.3.2 ***Warm cal mode.*** The warm cal mode science and engineering data is verified as follows:

1. From the STE command screen shown in Figure 11, enter the STE command "[11] WARM CAL MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES). Record the status on TDS 10.

2. Look to see that "ENGR OK" message is displayed in bottom left corner of screen. Record the status on TDS 10.

3. Look to see that the unit reflectors have moved to warm cal position. Enter the observed result on TDS 10.

4. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 10.

    a. Packet ID (elements 1 and 2, page 1 of printout)

    b. Packet length (elements 3 and 4, page 1 of printout)

    c. Unit serial number (elements 5 and 6, page 1 of printout)

    d. Instrument mode/status (elements 7 and 8, page 1 of printout)

    e. Reflector positions (use data from procedure AE-26002/2 TDS 6 for required position data for warm cal position) (pages 1 and 2 of printout)

    f. Radiometer scene data (pages 1 and 2 of printout)

    g. PRT temperature data (elements 262 - 300, page 2 of printout)

    h. Status (page 3 of printout)

    i. Engineering data (page 3 of printout)

5. Attach the printout to TDS 10.

3.3.5.3.3 ***Cold cal mode.*** The cold cal mode science and engineering data is verified as follows:

1. From the STE command screen shown in Figure 11, enter the STE command "[12] COLD CAL MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES). Record the status on TDS 11.

2. Look to see that "ENGR OK" message is displayed in bottom left corner of screen. Record the status on TDS 11.

3. Look to see that the unit reflectors have moved to cold cal position 1. Enter the observed result on TDS 11.

4. From the STE command screen shown in Figure 11, enter the STE command "[10] ANTENNA FULL SCAN MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

5. Enter the STE command [3] to obtain a full printout. Review the following data and record the result on TDS 11 (sheet 4):

Element	Description	Channel
254	Cold Cal Data 1	CH 1
256	Cold Cal Data 1	CH 2
258	Cold Cal Data 2	CH 1
260	Cold Cal Data 2	CH 2

6. From the STE command screen shown in Figure 11, enter the STE command "[12] ANTENNA COLD CAL MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

7. Enter the STE command [3] to obtain a full printout. Review the following data and record the results on TDS 11.

    a. Packet ID (elements 1 and 2, page 1 of printout)

    b. Packet length (elements 3 and 4, page 1 of printout)

    c. Unit serial number (element 5 and 6, page 1 of printout)

    d. Instrument mode/status (element 7 and 8, page 1 of printout)

    e. Reflector positions (use data from procedure AE-26002/2 TDS 2 for required position data for cold cal position 1) (page 1 and 2 of printout)

    f. Radiometric scene data (pages 1 and 2 of printout)

    g. PRT temperature data (elements 262 - 300, page 2 of printout)

    h. Status (page 3 of printout)

    i. Engineering data (page 3 of the printout)

8. Attach the printout to TDS 11.

9. From the STE command screen shown in Figure 11, enter the STE command "[15] COLD CAL POSITION 2". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES). Record status on TDS 11.

10. Look to see that "ENGR OK" message is displayed in the bottom left corner of screen. Record status on TDS 11.

11. Look to see that the unit reflector has moved to cold cal position 2. Enter the results on TDS 11.

12. From the STE command screen shown in Figure 11, enter the STE command "[10] ANTENNA FULL SCAN MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

13. Enter the STE command [3] to obtain a full printout. Review the following data and record the result on TDS 11 (sheet 4):

Element	Description	Channel
254	Cold Cal Data 1	CH 1
256	Cold Cal Data 1	CH 2
258	Cold Cal Data 2	CH 1
260	Cold Cal Data 2	CH 2

14. From the STE command screen shown in Figure 11, enter the STE command "[12] ANTENNA COLD CAL MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

15. Look to see that the unit reflector has moved to cold cal position 2.

16. Enter the STE command [3] to obtain a full printout. Review the following data and record the results on TDS 11.

    a. Instrument mode/status (element 7 and 8, page 1 of printout)

    b. Status (page 3 of printout)

    c. Reflector positions (use data from procedure AE-26002/2 TDS 2 for required position data for cold cal position 1) (page 1 and 2 of printout)

17. Attach the printout to TDS 11.

18. From the STE command screen shown in Figure 11, enter the STE command "[16] COLD CAL POSITION 3". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES). Record status on TDS 11.

19. Look to see that "ENGR OK" message is displayed in the bottom left corner of screen. Record status on TDS 11.

20. Look to see that the unit reflector has moved to cold cal position 3. Enter the results on TDS 11.

21. From the STE command screen shown in Figure 11, enter the STE command "[10] ANTENNA FULL SCAN MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

22. Enter the STE command [3] to obtain a full printout. Review the following data and record the result on TDS 11 (sheet 4):

Element	Description	Channel
254	Cold Cal Data 1	CH 1
256	Cold Cal Data 1	CH 2
258	Cold Cal Data 2	CH 1
260	Cold Cal Data 2	CH 2

23. From the STE command screen shown in Figure 11, enter the STE command "[12] ANTENNA COLD CAL MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

24. Look to see that the unit reflector has moved to cold cal position 3.

25. Enter the STE command [3] to obtain a full printout. Review the following data and record the results on TDS 11.

    a. Instrument mode/status (element 7 and 8, page 1 of printout)

    b. Status (page 3 of printout)

    c. Reflector positions (use data from procedure AE-26002/2 TDS 2 for required position data for cold cal position 1) (page 1 and 2 of printout)

26. Attach the printout to TDS 11.

27. From the STE command screen shown in Figure 11, enter the STE command "[17] COLD CAL POSITION 4". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES). Record status on TDS 11.

28. Look to see that "ENGR OK" message is displayed in the bottom left corner of screen. Record status on TDS 11.

29. Look to see that the unit reflector has moved to cold cal position 4. Enter the results on TDS 11.

30. From the STE command screen shown in Figure 11, enter the STE command "[10] ANTENNA FULL SCAN MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

31. Enter the STE command [3] to obtain a full printout. Review the following data and record the result on TDS 11 (sheet 4):

Element	Description	Channel
254	Cold Cal Data 1	CH 1
256	Cold Cal Data 1	CH 2
258	Cold Cal Data 2	CH 1
260	Cold Cal Data 2	CH 2

32. From the STE command screen shown in Figure 11, enter the STE command "[12] ANTENNA COLD CAL MODE". Look at the command screen to see that the command was received by the instrument (the state of the command should go from NO to YES).

33. Look to see that the unit reflector has moved to cold cal position 4.

34. Enter the STE command [3] to obtain a full printout. Review the following data and record the results on TDS 11.

    a. Instrument mode/status (element 7 and 8, page 1 of printout)

    b. Status (page 3 of printout)

    c. Reflector positions (use data from procedure AE-26002/2 TDS 2 for required position data for cold cal position 1) (page l and 2 of printout)

35. Attach the printout to TDS 11.

3.3.5.3.4 *Nadir mode.* The nadir mode science and engineering data is verified as follows:

1. From the STE command screen shown in Figure 11, enter the STE command "[13] NADIR MODE". Look at the commands screen to see that the command was received by the instrument (the state of that command should go from NO to YES). Record the status on TDS 12.

2. Look to see that "ENGR OK" message is displayed in bottom left corner of screen. Record the status on TDS 12.

3. Look to see that the unit reflectors have moved to nadir position. Enter the observed result on TDS 12.

4. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 12.

    a. Packet ID (elements 1 and 2, page 1 of printout)

    b. Packet length (elements 3 and 4, page 1 of printout)

    c. Unit serial number (elements 5 and 6, page 1 of printout)

    d. Instrument mode/status (elements 7 and 8, page 1 of printout)

    e. Reflector positions (use data from procedure AE-26002/2 TDS 6 for nadir required position data) (pages 1 and 2 of printout).

    f. Radiometer scene data (pages 1 and 2 of printout)

    g. PRT temperature data (elements 262 - 300, page 2 of printout)

    h. Status (page 3 of printout)

    i. Engineering data (page 3 of printout)

5. Attach the printout to TDS 12.

6. Leave the setup powered and intact for paragraph 3.3.6 testing.

3.3.5.3.5 ***Noisy bus current measurement during warm cal, cold cal, and Nadir mode.***

1. Place instrument in warm cal by repeating paragraph 3.3.5.3.2 step 1.

2. Record noisy bus current from STE noisy bus power supply display on TDS 10.

3. Command scanner to "OFF" and record current.

4. Command scanner "ON".

5. Place instrument in cold cal by repeating paragraph 3.3.5.3.3 step 1. Repeat step 2 of this paragraph.

6. Place instrument in Nadir by repeating paragraph 3.3.5.3.4 step1. Repeat step 2 of this paragraph.

3.3.5.4 ***1553 Bus interface test.*** The 1553 bus interface shall be verified by observing its operation during full-scan operation. The interface test shall be accomplished by the following steps:

1. Configure the unit as shown in Figure 18.

2. Ensure all switches are closed on the 9-pin breakout box.

NOTE

Scope and printer must be isolated from AC ground.

3. Connect oscilloscope to J3-1 (HI) and J3-2 (LO) to measure 1553 interface A data. A representative waveform is shown in Figure 19. Set the vertical to 5 volts, horizontal to 5 μs, and dc coupling to TRIG - CH 1. Print hard copy and attach to TDS 13.

4. Using the vertical and horizontal bars, measure the amplitude and rise-time of the instrument response. Records these on TDS 19. Figure 20 shows a typical rise-time measurement.

5. Repeat steps 3 and 4 for interface B. Attach and record data on TDS 13. Connect to J3-4 (HI) and J3-5 (LO).

3.3.6 ***Test point interface test.*** The purpose of this test is twofold:

1. Verify the following test point signals:

   a. 8 second sync pulse test point (3.3.6.1)

   b. Integrate/hold and dump test points (3.3.6.2)

   c. Channel 1 and 2 analog output test points (3.3.6.3)

2. Verify the following GSE mode operations:

   a. GSE-1 mode (3.3.6.4)

   b. GSE-2 mode (3.3.6.5)

   c. GSE-3 mode (3.3.6.6)

   d. GSE-4 mode (3.3.6.7)

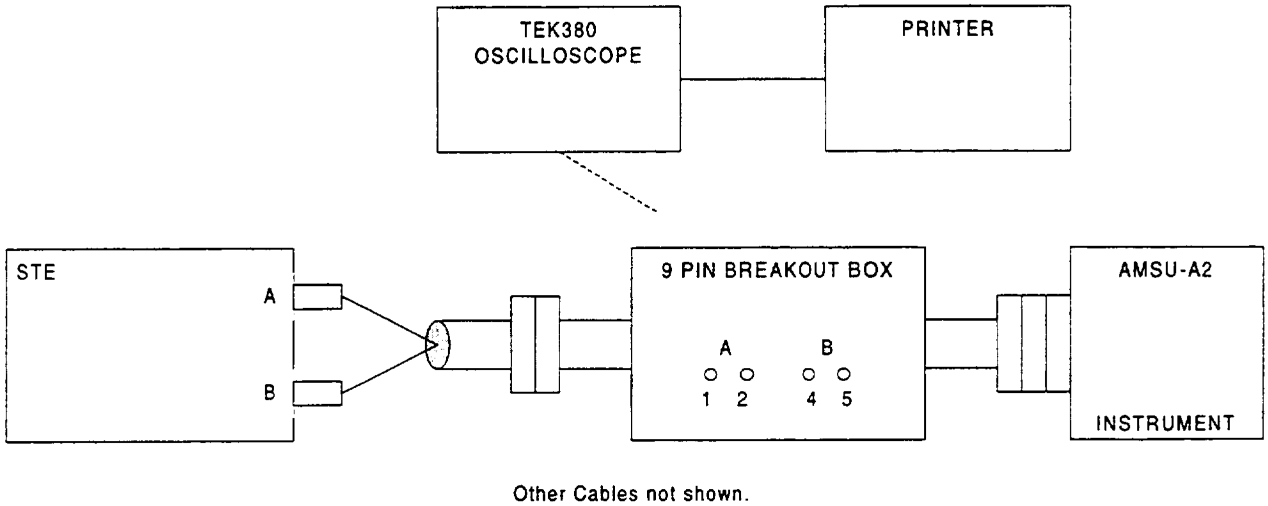


Figure 18. Configuration for 1553 Interface Test Setup

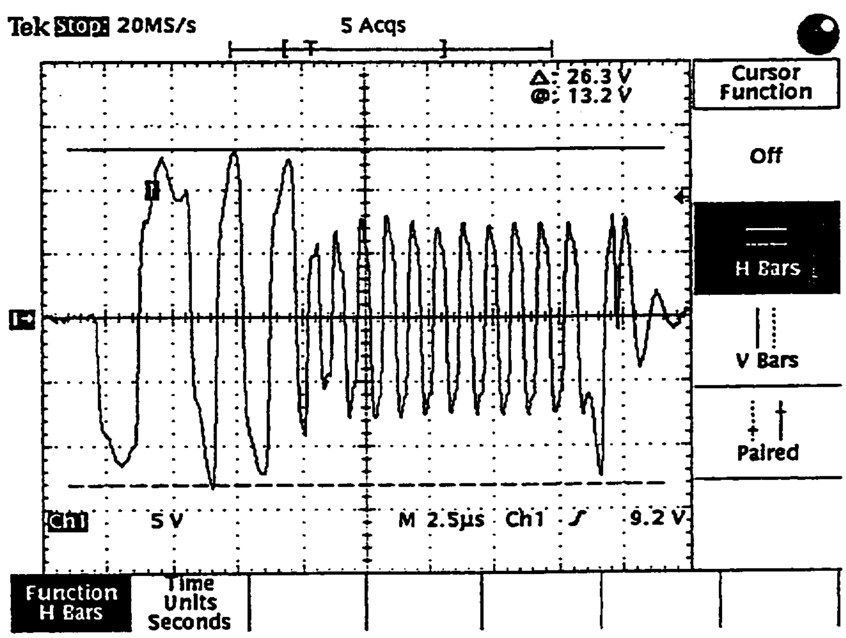


Figure 19. Typical 1553 Bus Waveform (Instrument Response)

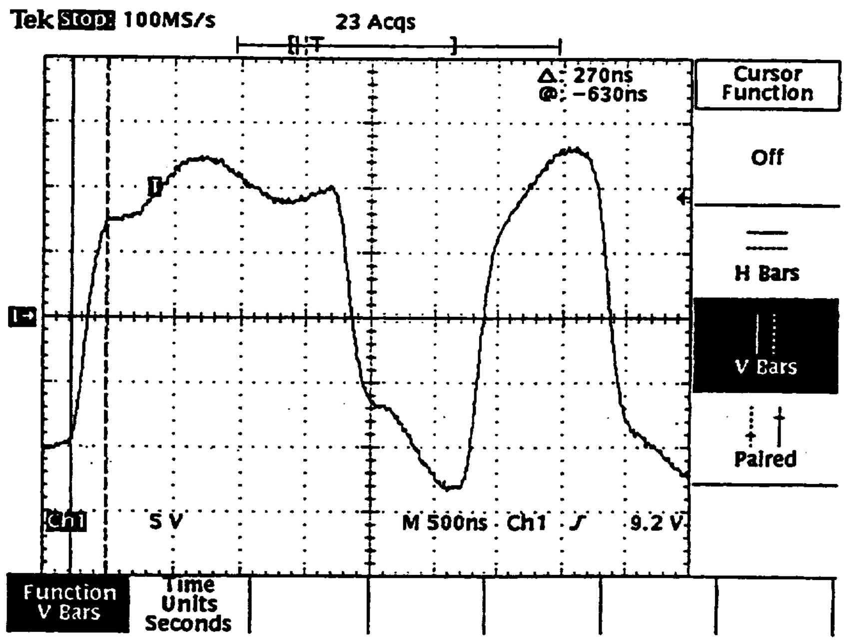


Figure 20. Typical Rise-Time Measurement

e. GSE-5 mode (3.3.6.8)

f. GSE-7 mode (3.3.6.9)

The test point interface connector (J4) is not used during spacecraft configuration and is covered with a cover plate when the unit is operating in the flight configuration. The above test points and GSE modes are used only by Aerojet during test and evaluation of instrument performance and do not meet any system level requirements.

3.3.6.1 ***8 second sync pulse test point verification.*** Perform the following procedures.

1. Connect channel 1 of the oscilloscope to pins J4-2 (High) and J4-21 (Low).

2. Plot the oscilloscope display and record the information indicated on TDS 14. Attach the plot to TDS 14.

3.3.6.2 ***Integrate/Hold and dump test point verification.*** Perform the following procedures.

1. Connect channel 1 of the oscilloscope to pins J4-6 (High) and J4-5 (Low).

2. Connect channel 2 of the oscilloscope to pins J4-23 (High) and J4-5 (Low).

3. Set the scope to trigger internally on channel 1. Optimize time and amplitude for best resolution. The desired display should look similar to the top two traces shown in Figure 21.

4. Plot the oscilloscope display and record the information indicated on TDS 15. Attach the plot to TDS 15.

3.3.6.3 ***Radiometer channel analog output test point verification.*** Perform the following procedures.

1. Connect channel 1 of the oscilloscope to pins J4-8 (High) and J4-26 (Low). For RADIOMETRIC CHAN1, optimize time and amplitude for best resolution. The desired display should look similar to the bottom trace shown in Figure 21.

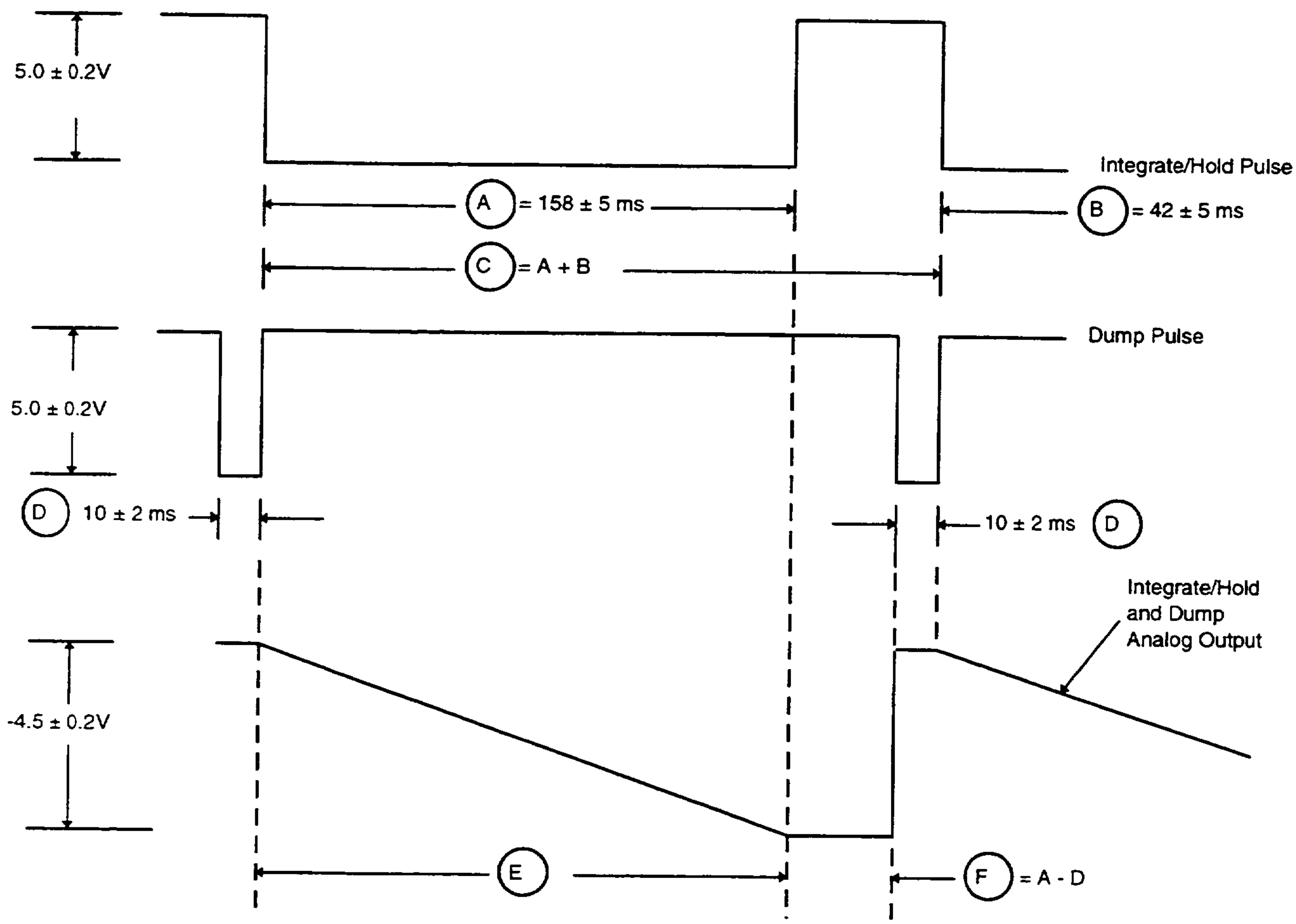


Figure 21. Integrate/Hold, Dump, and Analog Out Test Point Signals

2. Plot the oscilloscope display and record the information indicated on TDS 16. Label the plot Channel 1 and attach the plot to TDS 16.

3. Connect channel 1 of the oscilloscope to pins J4-9 (High) and J4-26 (Low). For RADIOMETRIC CHAN2, optimize time and amplitude for best resolution. The desired display should look similar to the bottom trace shown in Figure 21.

4. Plot the oscilloscope display and record the information indicated on TDS 16. Label the plot Channel 2 and attach the plot to TDS 16.

3.3.6.4 ***GSE-1 mode verification***. This test mode positions the reflectors at beam position 6 for 10 integration periods, then to the cold calibration position for 10 integration periods, and finally to the warm cal position for 10 integration periods. This process is then repeated. To verify this mode, perform the following procedures. Look at engineering data, also unpowered thermistors prior to starting these modes.

1. Enter a "1" on the mode switch located on the front of the STE test panel (refer to Figure 2 for test panel location).

2. From the STE command screen shown in Figure 11, enter the STE command "[19] GSE MODE" .

3. Wait 18 seconds, and look to see that the unit is performing the scan pattern described. Enter the observed result on TDS 17.

4. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 17.

    a. Packet ID (elements 1 and 2, page 1 of printout)

    b. Packet length (elements 3 and 4, page 1 of printout)

    c. Unit serial number (elements 5 and 6, page 1 of printout)

    d. Instrument mode/status (elements 7 and 8, page 1 of printout)

    e. Reflector positions (1st 10 at beam position 6, 2nd 10 at cold cal position, 3rd 10 at warm cal position, ignore cold cal and warm cal positions on the printout) (pages 1 and 2 of printout)

    f. Radiometer scene data (pages 1 and 2 of printout)

    g. PRT temperature data (elements 262 - 300, page 2 of printout)

    h. Status (page 3 of printout)

    i. Engineering data (page 3 of printout)

5. Attach the printout to TDS 17. There is no pass/fail criteria.

3.3.6.5 *GSE-2 mode verification.* This test mode positions the reflectors at beam position 1 for 30 integration periods. This process is then repeated. To verify this mode, perform the following procedures.

1. Enter a "2" on the mode switch located on the front of the STE test panel.

2. Wait 18 seconds, and look to see that the unit is performing the scan pattern described. Enter the observed result on TDS 17.

3. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 17.

    a. Packet ID (elements 1 and 2, page 1 of printout)

    b. Packet length (elements 3 and 4, page 1 of printout)

    c. Unit serial number (elements 5 and 6, page 1 of printout)

    d. Instrument mode/status (elements 7 and 8, page 1 of printout)

    e. Reflector positions (30 positions at beam position 1, ignore cold cal and warm cal positions on the printout) (pages 1 and 2 of printout)

    f. Radiometer scene data (pages 1 and 2 of printout)

g. PRT temperature data (elements 262 - 300, page 2 of printout)

h. Status (page 3 of printout)

i. Engineering data (page 3 of printout)

4. Attach the printout to TDS 17. There is no pass/fail criteria.

3.3.6.6 ***GSE-3 mode verification.*** This test mode positions the reflectors at each beam position for 30 integration periods incrementing the beam position to the next beam position each 8 seconds. This process is then repeated. To verify this mode, perform the following procedures.

1. Enter a "3" on the mode switch located on the front of the STE test panel.

2. Wait 18 seconds, and look to see that the unit is performing the scan pattern described. Enter the observed result on TDS 17.

3. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 17.

   a. Packet ID (elements 1 and 2, page 1 of printout)

   b. Packet length (elements 3 and 4, page 1 of printout)

   c. Unit serial number (elements 5 and 6, page 1 of printout)

   d. Instrument mode/status (elements 7 and 8, page 1 of printout)

   e. Reflector positions (30 positions at beam position when printout obtained, ignore cold cal and warm cal positions on the printout) (pages 1 and 2 of printout)

   f. Radiometer scene data (pages 1 and 2 of printout)

   g. PRT temperature data (elements 262 - 300, page 2 of printout)

   h. Status (page 3 of printout)

   i. Engineering data (page 3 of printout)

4. Attach the printout to TDS 17. There is no pass/fail criteria.

3.3.6.7 ***GSE-4 mode verification.*** This test mode positions the reflectors at beam position 30 for 30 integration periods. This process is then repeated. To verify this mode, perform the following procedures.

1. Enter a "4" on the mode switch located on the front of the STE test panel.

2. Wait 18 seconds, and look to see that the unit is performing the scan pattern described. Enter the observed result on TDS 17.

3. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 17.

   a. Packet ID (elements 1 and 2, page 1 of printout)

b. Packet length (elements 3 and 4, page 1 of printout)

c. Unit serial number (elements 5 and 6, page 1 of printout)

d. Instrument mode/status (elements 7 and 8, page 1 of printout)

e. Reflector positions (30 positions at beam position 30, ignore cold cal and warm cal positions on the printout) (pages 1 and 2 of printout)

f. Radiometer scene data (pages 1 and 2 of printout)

g. PRT temperature data (elements 262 - 300, page 2 of printout)

h. Status (page 3 of printout)

i. Engineering data (page 3 of printout)

4. Attach the printout to TDS 17. There is no pass/fail criteria.

3.3.6.8 ***GSE-5 mode verification.*** This test mode positions the reflectors at beam position 6 for 39 integration periods. This process is then repeated. To verify this mode, perform the following procedures.

1. Enter a “5” on the mode switch located on the front of the STE test panel.

2. Wait 18 seconds, and look to see that the unit is performing the scan pattern described. Enter the observed result on TDS 17.

3. Enter the STE command “[3]” to obtain a full printout. Review the following data and record the results on TDS 17.

   a. Packet ID (elements 1 and 2, page 1 of printout)

   b. Packet length (elements 3 and 4, page 1 of printout)

   c. Unit serial number (elements 5 and 6, page 1 of printout)

   d. Instrument mode/status (elements 7 and 8, page 1 of printout)

   e. Reflector positions (30 positions at beam position 6, ignore cold cal and warm cal positions on the printout) (pages 1 and 2 of printout)

   f. Radiometer scene data (pages 1 and 2 of printout)

   g. PRT temperature data (elements 262 - 300, page 2 of printout)

   h. Status (page 3 of printout)

   i. Engineering data (page 3 of printout)

4. Attach the printout to TDS 17. There is no pass/fail criteria.

3.3.6.9 ***GSE-7 mode verification.*** This test mode is used in conjunction with GSE-3 mode to pause the reflector at the current beam position for 30 integration periods. This process is then repeated. To verify this mode, perform the following procedures.

1. Enter a "7" on the mode switch located on the front of the STE test panel.

2. Wait 18 seconds, and look to see that the unit is performing the scan pattern described. Enter the observed result on TDS 17.

3. Enter the STE command "[3]" to obtain a full printout. Review the following data and record the results on TDS 17.

   a. Packet ID (elements 1 and 2, page 1 of printout)

   b. Packet length (elements 3 and 4, page 1 of printout)

   c. Unit serial number (elements 5 and 6, page 1 of printout)

   d. Instrument mode/status (elements 7 and 8, page 1 of printout)

   e. Reflector positions (30 positions at current beam position, ignore cold cal and warm cal positions on the printout) (pages 1 and 2 of printout)

   f. Radiometer scene data (pages 1 and 2 of printout)

   g. PRT temperature data (elements 262 - 300, page 2 of printout)

   h. Status (page 3 of printout)

   i. Engineering data (page 3 of printout)

4. Attach the printout to TDS 17. There is no pass/fail criteria.

3.3.7 ***Radiometer functional performance test.*** The purpose of this test is to verify the radiometric performance of the AMSU-A2 instrument at the system level. This test consists of:

1. Relative radiometer NEΔT measurements (3.3.7.1)

3.3.7.1 ***Relative radiometer NEΔT measurements.*** The purpose of this test is to perform a preliminary evaluation of the radiometer NEΔT at the system level. Since the STE is not in the thermal vacuum configuration, no temperature readings from the cold load are available. To compute the NEΔT for this test, the temperature used for the cold load temperature shall be 80 K.

The data obtained from this test are considered as relative NEΔT and are to be used as a diagnostic tool to verify proper operation of each radiometer channel from antenna input to the spacecraft interface. The equation to determine relative NEΔT is as follows:

$$\mathrm{NE}\Delta T = \frac{\left[SD*\left(T_h - T_c\right)\right]}{M - N}$$

where

SD = Standard deviation of 120 radiometric samples looking at the warm load

T_h = Physical temperature of the warm load (300 K)

T_c = Physical temperature of the cold target (80 K)

M = Average of the radiometric readings in counts viewing the warm load (120 samples)

N = Average of the radiometric readings in counts viewing the cold target (30 samples)

Perform the following procedures:

WARNING

The use of liquid nitrogen in a confined poorly ventilated area can cause asphyxiation and death due to lack of oxygen (oxygen concentration below 20 percent). Accidental contact with liquid nitrogen will cause severe frostbite to the eyes or skin. When handling liquid nitrogen, personnel shall observe the following safety precautions:

a. Ensure that the work area is well ventilated to prevent excessive gas buildup.

b. To protect your eyes always wear a face shield or safety goggles (safety glasses without side shields do not provide adequate protection).

c. To protect exposed skin always wear an apron when pouring LN_2 and whenever exposed to LN_2, always wear a lab coat, gloves made for cryogenic work, cuffless trousers (worn outside the boots or shoes), and safety shoes.

d. Do not fill target fuller then 1.0 inch from the top. Fill target at the floor level, away from unit.

e. Do not move filled target without cover in place.

1. The unit should still be powered and configured as shown in Figure 12.

2. After the unit is stabilized (minimum of 30 minutes required), fill the cold target with liquid nitrogen and position it as shown in Figure 22.

3. From the STE command screen shown in Figure 11, enter the STE command "[11] WARM CAL MODE".

4. Enter the STE command "[1] RETURN" twice to return to the EOS/AMSU-A2 STE main screen shown in Figure 9.

5. From the main screen, enter the STE command "[13] FUNCTIONAL TEST".

6. No additional operator input is needed as the computer will automatically display the results. There is typically a 40 second delay after executing a functional test before the results are displayed. A typical screen is shown in Figure 23.

7. Obtain a screen printout by issuing the STE command "[2]".

8. Repeat steps 5 through 7 four more times obtaining four additional screen printouts. Average the NEΔT readings from the five printouts for each channel and enter those averages on TDS 18. Attach the printouts to TDS 18.

9. Remove the cold load and associated hardware.

10. Turn the STE power supply panel N/Pulse switch off (refer to Figure 3).

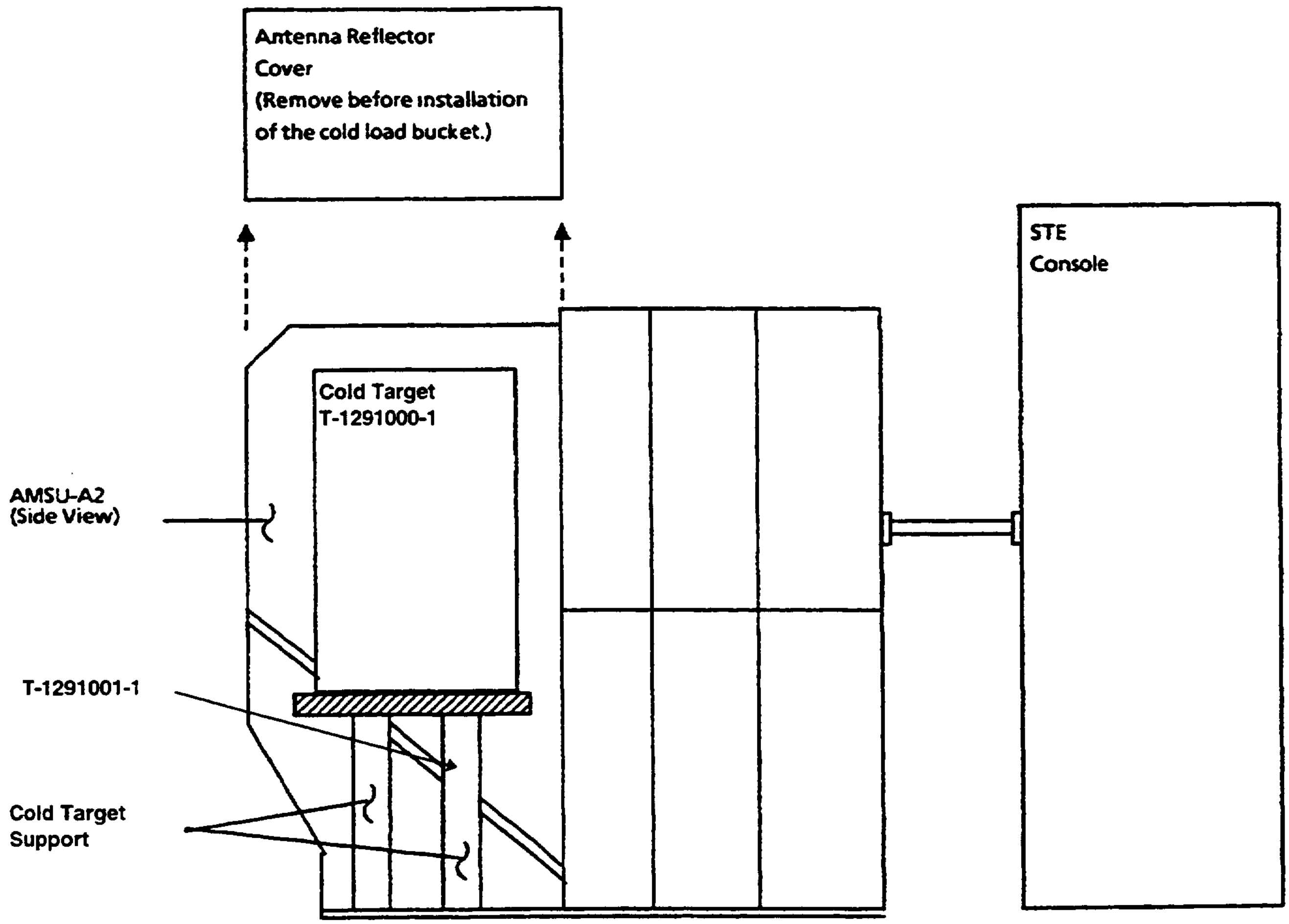


Figure 22. Relative NEΔT Test Setup

CH	WARM TEMP.	WARM COUNTS	COLD COUNTS	GAIN	DELTA-T
1	297.45	16558.0	13752.0	0.069	0.623
2	297.44	16317.0	13108.0	0.061	0.556

Figure 23. Typical Screen Display Following a Functional Test

11. Turn the STE power supply panel Q/Main switch off (refer to Figure 3).

12. Turn the STE power supply panel main power switch off (refer to Figure 3).

3.3.8 ***Channel identification test.*** The purpose of the channel identification test is to verify the proper final configuration/assembly of each radiometer channel from antenna input to the spacecraft interface.

1. Configure the unit and test equipment as shown in Figure 12

NOTE

Use of the 25-pin breakout box is optional for this test.

2. Connect the STE to instrument using the following STE interface cables.

   a. STE interface cable J1 (1356648-1)

   b. STE interface cable J2 (1356648-2)

   c. STE interface cable J3 (1356648-3)

3. Turn the STE main power switch ON. From the A2 directory, and at the "$" prompt, enter the command to the STE "RUN E2." The A2 software program should be running as evidenced by the STE screen shown in Figure 9.

4. Turn the STE power supply panel main power switch ON (refer to Figure 3).

5. Turn the STE power supply panel Q/Main switch ON (refer to Figure 3).

6. Turn the STE power supply panel N/Pulse switch ON (refer to Figure 3).

7. From the main screen shown in Figure 9, enter the STE command [2] "MONITOR ONLY." The screen should now be as shown in Figure 10. Enter the STE command "[14] COMMANDS." The screen should now be as shown in Figure 11.

8. Enter the STE command "SCANNER POWER." Wait 18 seconds before issuing the next command.

9. Enter the STE command "ANTENNA COLD CAL." Wait 18 seconds before issuing the next command. The reflector should scan to the cold calibration beam position.

10. Enter the STE command "[1] RETURN" to return to the monitor only screen shown in Figure 10.

11. Enter the STE command "[10] SCIENCE DATA." The STE should now display the science data screen shown in Figure 24. From this screen enter the STE command "[9] BEAM POSITION NN-ALL CHANNELS."

12. The STE then prompts "ENTER BEAM POSITION NO (1 TO 30)." Enter "30" to show the radiometric counts data for channels 1 and 2. The STE should now display the radiometric data screen shown in Figure 25 except with a different set of count data.

13. Allow the instrument to stabilize for approximately 20 minutes. Enter the STE command "[2]" to obtain a screen only printout.

14. Configure the unit and test equipment as shown in Figure 26. Turn ON the sweeper and allow to warm up approximately 10 minutes. Make sure that the RF power is OFF during sweeper warm up.

CAUTION

> Extreme care must be used when turning on RF power. When RF power is first applied the gain horn should be approximately three to four feet from the unit. The RF power setting should be no greater than -20 dBm.

15. Set the sweeper frequency to 23.8 ± .01 GHz and set the RF power level to -20 dBm. Position the gain horn three to four feet from the instrument so that the antenna and gain horn are approximately aligned. Rotate the gain horn, if needed, to the vertical polarization position.

16. Turn ON the RF power making sure the power level is set to -20 dBm. Allow the multiplier to warm up approximately five minutes.

17. At the STE screen, compare the radiometric data counts of channel 1 to the counts printed out at step 13. Enter the STE command "[2]" to obtain a screen only printout.

18. From the printouts obtained in steps 13 and 17 verify that the radiometric data counts for channel 1 have increased significantly, approximately 10,000 or more, and that the other channels data counts have remained relatively unchanged, less than 300 counts.\

19. Record the count differences on TDS 19 of channel 1 from the printouts obtained in steps 13 and 17 and attach printouts to TDS 19.

20. Repeat steps 15 through 19 for the frequencies and polarizations listed on TDS 19.

21. After both channels have been identified, turn OFF the RF power. Return the reflector to the warm cal position.

22. Turn the STE Q/Main and N/Pulse switches to OFF

23. Turn the STE power supply panel main power switch OFF.

```
EOS A2-02 E2  COLD CAL MODE  5-JUN-98 09:36:59 SCAN NUMBER 34
[ 5 ]     SCIENCE DATA ELEMENT 0000
[ 6 ]     CONTROL/STATUS ELEMENT 00
[ 7 ]     ENGINEERING ELEMENT 00
[ 8 ]     DATA STREAM (64 VALUES)
[ 9 ]     BEAM POSITION NN - ALL CHANNELS
[ 10 ]    CHANNEL NN - ALL BEAM POSITIONS
[ 11 ]    WARM CALIBRATE
[ 12 ]    COLD CALIBRATE
[ 13 ]    REFLECTOR POSITIONS
[ 14 ]    TEMPERATURE DATA (16 VALUES)
ENGR OK   POWER   ON   CHECKSUM IN 15A1 SA28  34SA29   47
          SCREEN ONLY [ 2 ]   PRINT [ 3 ] FULL   [ 1 ] RETURN
SELECT BUTTON 2
```

Figure 24. Science Data Screen

```
EOS ' A2-XX E2.EXE;4          4-MAR-98   14:53:41   SCAN NUMBER
[ 5 ]     SCIENCE DATA       ELEMENT 0000
[ 6 ]     CONTROL/STATUS     ELEMENT  00
[ 7 ]     ENGINEERING        ELEMENT  00
                             RADIOMETRIC DATA
                              BEAM POSITION 1

                                CH     DATA
                                1      16,275
                                2      16,189


[ 21 ] UP                 [ 22] DOWN
      POWER      OFF     CHECKSUM  IN  CALC   SA28  0 SA29   0
          SCREEN ONLY [ 2 ]   PRINT [ 3 ] FULL   [ 1 ] RETURN
SELECT BUTTON 2
```

Figure 25. Radiometric Data Screen

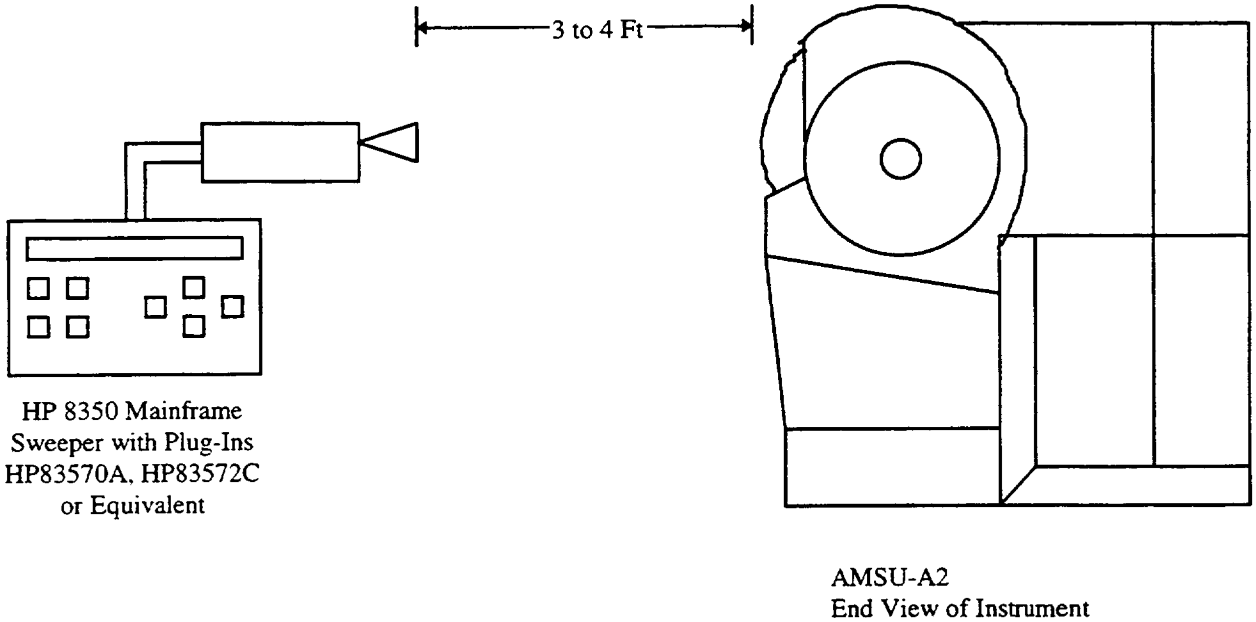


Figure 26. Channel Identification Set Up

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4. QUALITY ASSURANCE PROVISIONS

4.1 ***Responsibility for inspection.*** Aerojet Quality Assurance shall inspect in accordance with the requirements of this test procedure, S-480-80 and S-480-79. Quality Control shall verify all test set-ups prior to start of test. Bonded software shall be used for all tests and shall be obtained from Quality Control. Quality Control shall review all test data for conformance to success criteria. The test data shall include test limits. For tests that satisfy requirements from S-480-80 on protoflight and flight units, customer representatives shall be invited to monitor tests and shall be invited to review the data and show approval on the test data sheets.

4.1.1 ***Test facilities.*** Unless otherwise specified, the examinations and tests described herein shall be conducted at Aerojet, Azusa Operations, Azusa, California.

4.1.2 ***Electrostatic device (ESD) handling.*** All electronic hardware shall be handled in accordance with Aerojet Standard STD-2454.

4.2 ***Monitoring procedures.*** All tests in this procedure shall be monitored by Quality Control.

4.2.1 ***Test equipment.*** Test equipment calibration procedures shall comply with the requirements of MIL-STD-45662.

4.2.2 ***Software.*** Bonded software shall be used at all times.

4.3 ***Monitoring procedures for materials.*** Not applicable.

4.4 ***Certification.*** Certification for handling ESD sensitive equipment is required for all personnel working on the assembly and test of the AMSU-A instrument.

4.5 ***Test methods***

4.5.1 ***Accept-reject criteria.*** The accept-reject criteria for each examination or test shall be as specified in the data sheets included in each phase of the applicable test procedure. The test results shall be recorded on the data sheets to demonstrate compliance with the applicable specification requirements. Methods of analysis shall be appropriate for the parameters being inspected. It shall be the responsibility of Aerojet to review the test data and determine conformance of the unit under test to the performance requirements contained in S-480-80 and this specification.

In the event of a failure during any phase of this test procedure, the test activity shall record the required information on the Test Anomaly Record and alert the design assurance and quality engineers. Except for failures which only represent a limited out-of-tolerance condition for a particular parameter and are not expected to interfere with the balance of the testing and which are non-destructive, the testing must be stopped until a complete description of the observed anomaly failure is documented and a Failure Analysis Strategy (FAS) is formulated, documented, and implemented to preclude loss of information or evidence that may facilitate determining the failure cause. The full set of data from the referenced tests are required in order to formulate a plan of action. The cognizant reliability engineer, quality assurance engineer, and the system or responsible test engineer shall jointly develop the FAS which must be approved by Design Assurance and Quality Assurance. Analysis and reporting shall be performed in accordance with Aerojet procedures.

4.5.2 ***General.*** Separate test reports shall be prepared in accordance with 4.5.2.1.1 for each series which has successfully completed testing. This report shall include all data sheets associated with the tests on the unit plus the data reduction and analysis of specific parameters required by each applicable test procedure specification obtained from screen printouts and plots, oscilloscope photographs, or magnetic recordings. During tests in which a CRT screen is to be printed or plotted and retained as a data sheet, the following annotation shall be applied:

Test/Systems Engineer:	______________________ (Signature)
Quality Control:	______________________ (Signature)
Customer Representative: (Flight hardware only)	______________________ (Signature)
Date:	______________________
Test Paragraph No.:	______________________
Subassembly/Assembly Serial No.	______________________

The report shall also include a certification statement. A complete copy of the report shall be included in the shop order package.

4.5.2.1 ***Acceptance test reports***

4.5.2.1.1 ***Format.*** The acceptance test report shall be prepared and shall include, as a minimum, the following:

a. Title page

b. Summary

c. Requirements satisfied (if any)

d. Discrepancy reports (if any)

e. Test data

4.5.2.1.2 ***Test data.*** The test data included in the report shall be that which was obtained during performance of the tests specified herein and recorded on the Test Data Sheet(s) (TDS) (see Appendix A) and on printouts and plots.

5. NOTES

5.1 ***Intended use.*** The intended use of this process specification is to establish the requirements for the comprehensive and limited performance testing of the Advanced Microwave Sounding Unit - A1 System.

5.2 *Abbreviations and acronyms*

AMSU	Advanced Microwave Sounding Unit
BW	Bandwidth
C	Celsius
CAL	Calibration
CCA	Circuit Card Assembly
CH	Channel
CPT	Comprehensive Performance Test
DMM	Digital Multimeter
DRB	Decade Resistor Box
DVM	Digital Voltmeter
ESD	Electrostatic Discharge
F	Fail
FAS	Failure Analysis Strategy
GND	Ground
GPIB	General Purpose Interface Bus
GSFC	Goddard Space Flight Center
HP	Hewlett-Packard
HTR	Heater
I/O	Input/Output
IF	Intermediate Frequency
K	Degrees Kelvin
LO	Local Oscillator
LPT	Limited Performance Test
max	Maximum
MUX	Multiplexer
NF	Noise Figure
P	Pass
P/N	Part Number
PRT	Platinum Resistance Transducer
RF	Radio Frequency
RTN	Return
S/N	Serial Number
STE	Special Test Equipment

TAR	Test Anomaly Record
TDS	Test Data Sheet
TLM	Telemetry

APPENDIX A

TEST DATA SHEETS

10. APPENDIX A

10.1 ***Scope.*** This appendix contains the test data sheets for all tests and inspections listed in section 3.

TEST DATA SHEET NO. 1 (Sheet 1 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J1 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	+29V QUIET PWR BUS	> 1M		
J1-2	+29V QUIET PWR BUS	> 1M		
J1-3	29V QUIET BUS RTN	> 1M		
J1-4	29V QUIET BUS RTN	> 1M		
J1-5	+29V NOISY PWR BUS	> 1M		
J1-6	+29V NOISY PWR BUS	> 1M		
J1-7	29V NOISY BUS RTN	> 1M		
J1-8	29V NOISY BUS RTN	> 1M		
J1-9	SURVIVAL PWR BUS A	> 1M		
J1-10	SURVIVAL BUS A RTN	> 1M		
J1-11	SURVIVAL PWR BUS A	> 1M		
J1-12	SURVIVAL BUS A RTN	> 1M		
J1-13	CHASSIS GROUND	< 1		
J1-14	+29V QUIET PWR BUS	> 1M		
J1-15	+29V QUIET PWR BUS	> 1M		
J1-16	29V QUIET BUS RTN	> 1M		
J1-17	29V QUIET BUS RTN	> 1M		
J1-18	+29V NOISY PWR BUS	> 1M		
J1-19	+29V NOISY PWR BUS	> 1M		
J1-20	29V NOISY BUS RTN	> 1M		
J1-21	29V NOISY BUS RTN	> 1M		
J1-22	SURVIVAL PWR BUS B	> 1M		
J1-23	SURVIVAL BUS B RTN	> 1M		
J1-24	SURVIVAL PWR BUS B	> 1M		
J1-25	SURVIVAL BUS B RTN	> 1M		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 1 (Sheet 2 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J2 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J2-1	A2 MOTOR TEMP HI	> 1M		
J2-2	A2 MOTOR TEMP LO	> 1M		
J2-3	A2 RECEIVER TEMP 1 HI	> 1M		
J2-4	A2 RECEIVER TEMP 1 LO	> 1M		
J2-5	A2 WARM LOAD TEMP HI	> 1M		
J2-6	A2 WARM LOAD TEMP LO	> 1M		
J2-7	No Connection	> 1M		
J2-8	No Connection	> 1M		
J2-9	No Connection	> 1M		
J2-10	No Connection	> 1M		
J2-11	No Connection	> 1M		
J2-12	No Connection	> 1M		
J2-13	No Connection	> 1M		
J2-14	No Connection	> 1M		
J2-15	No Connection	> 1M		
J2-16	No Connection	> 1M		
J2-17	No Connection	> 1M		
J2-18	No Connection	> 1M		
J2-19	No Connection	> 1M		
J2-20	No Connection	> 1M		
J2-21	No Connection	> 1M		
J2-22	A2 RECEIVER TEMP 2 HI	> 1M		
J2-23	A2 RECEIVER TEMP 2 LO	> 1M		
J2-24	No Connection	> 1M		
J2-25	No Connection	> 1M		
J2-26	No Connection	> 1M		
J2-27	No Connection	> 1M		
J2-28	No Connection	> 1M		
J2-29	No Connection	> 1M		
J2-30	No Connection	> 1M		
J2-31	No Connection	> 1M		
J2-32	No Connection	> 1M		
J2-33	No Connection	> 1M		
J2-34	No Connection	> 1M		
J2-35	No Connection	> 1M		
J2-36	No Connection	> 1M		
J2-37	No Connection	> 1M		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

____
Test Systems Engineer Date

____
Customer Representative Date

____
Quality Control Date

TEST DATA SHEET NO. 1 (Sheet 3 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J3 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J3-1	1553 INTERFACE DATA A HI	> 100K		
J3-2	1553 INTERFACE DATA A LO	> 100K		
J3-3	No Connection	> 1M		
J3-4	1553 INTERFACE DATA B LO	> 100K		
J3-5	1553 INTERFACE DATA B HI	> 100K		
J3-6	1553 INTERFACE DATA A SHIELD	< 1		
J3-7	No Connection	> 1M		
J3-8	No Connection	> 1M		
J3-9	1553 INTERFACE DATA B SHIELD	< 1		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

____
Test Systems Engineer Date

____
Customer Representative Date

____
Quality Control Date

TEST DATA SHEET NO. 1 (Sheet 4 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J4 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J4-1	CHASSIS GROUND	< 1		
J4-2	8 SECOND SYNC PULSE TP	> 100K		
J4-3	No Connection	> 1M		
J4-4	No Connection	> 1M		
J4-5	I/H & DUMP RTN (2/3)	< 1		
J4-6	DUMP COMMAND TP	> 100K		
J4-7	No Connection	> 1M		
J4-8	CH 1 ANALOG OUT TP	> 100K		
J4-9	CH 2 ANALOG OUT TP	> 100K		
J4-10	No Connection	> 1M		
J4-11	No Connection	> 1M		
J4-12	No Connection	> 1M		
J4-13	No Connection	> 1M		
J4-14	No Connection	> 1M		
J4-15	No Connection	> 1M		
J4-16	No Connection	> 1M		
J4-17	GSE COMMAND LSB	> 5K		
J4-18	GSE COMMAND MSB-1	> 5K		
J4-19	No Connection	> 1M		
J4-20	1.248 MHz CLOCK TP	> 100K		
J4-21	1.248 MHz CLOCK RTN (1)	< 1		
J4-22	No Connection	> 1M		
J4-23	I/H COMMAND TP	> 100K		
J4-24	No Connection	> 1M		
J4-25	No Connection	> 1M		
J4-26	ANALOG OUT RTN (2/3)	< 1		
J4-27	No Connection	> 1M		
J4-28	No Connection	> 1M		
J4-29	No Connection	> 1M		
J4-30	No Connection	> 1M		
J4-31	No Connection	> 1M		
J4-32	No Connection	> 1M		
J4-33	No Connection	> 1M		
J4-34	No Connection	> 1M		
J4-35	GSE COMMAND MSB	> 5K		
J4-36	GSE COMMAND RTN (1)	< 1		
J4-37	No Connection	> 1M		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 1 (Sheet 5 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

Source	Destination	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	J1-2	+29V QUIET PWR BUS	<1		
J1-1	J1-14	+29V QUIET PWR BUS	<1		
J1-1	J1-15	+29V QUIET PWR BUS	<1		
J1-3	J1-4	29V QUIET BUS RTN	<1		
J1-3	J1-16	29V QUIET BUS RTN	<1		
J1-3	J1-17	29V QUIET BUS RTN	<1		
J1-5	J1-6	+29V NOISY PWR BUS	<1		
J1-5	J1-18	+29V NOISY PWR BUS	<1		
J1-5	J1-19	+29V NOISY PWR BUS	<1		
J1-7	J1-8	29V NOISY BUS RTN	<1		
J1-7	J1-20	29V NOISY BUS RTN	<1		
J1-7	J1-21	29V NOISY BUS RTN	<1		
J1-9	J1-11	SURVIVAL PWR BUS A	<1		
J1-10	J1-12	SURVIVAL BUS A RTN	<1		
J1-22	J1-24	SURVIVAL PWR BUS B	<1		
J1-23	J1-25	SURVIVAL BUS B RTN	<1		
J1-1	J1-5	+29V QUIET PWR BUS	> 1M		
J1-1	J1-7	+29V QUIET PWR BUS	> 1M		
J1-1	J1-9	+29V QUIET PWR BUS	> 1M		
J1-1	J1-10	+29V QUIET PWR BUS	> 1M		
J1-1	J1-22	+29V QUIET PWR BUS	> 1M		
J1-1	J1-23	+29V QUIET PWR BUS	> 1M		
J1-3	J1-5	29V QUIET BUS RTN	> 1M		
J1-3	J1-7	29V QUIET BUS RTN	> 1M		
J1-3	J1-9	29V QUIET BUS RTN	> 1M		

EOS/AMSU-A2 System P/N 1356006   Shop Order: __________   S/N: __________
Circle Test: 1st CPT   Final CPT   Sub CPT __________   LPT __________

Test Systems Engineer   Date

Customer Representative   Date

Quality Control   Date

TEST DATA SHEET NO. 1 (Sheet 6 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

Source	Destination	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-3	J1-10	29V QUIET BUS RTN	> 1M		
J1-3	J1-22	29V QUIET BUS RTN	> 1M		
J1-3	J1-23	29V QUIET BUS RTN	> 1M		
J1-5	J1-9	+29V NOISY PWR BUS	> 1M		
J1-5	J1-10	+29V NOISY PWR BUS	> 1M		
J1-5	J1-22	+29V NOISY PWR BUS	> 1M		
J1-5	J1-23	+29V NOISY PWR BUS	> 1M		
J1-7	J1-9	29V NOISY BUS RTN	> 1M		
J1-7	J1-10	29V NOISY BUS RTN	> 1M		
J1-7	J1-22	29V NOISY BUS RTN	> 1M		
J1-7	J1-23	29V NOISY BUS RTN	> 1M		
J1-9	J1-22	SURVIVAL PWR BUS A	> 1M		
J1-9	J1-23	SURVIVAL PWR BUS A	> 1M		
J1-10	J1-22	SURVIVAL BUS A RTN	> 1M		
J1-10	J1-23	SURVIVAL BUS A RTN	> 1M		
J1-13	J1 OUTER SHELL	CHASSIS GROUND	< 1		
J1-13	J2 OUTER SHELL	CHASSIS GROUND	< 1		
J1-13	J3 OUTER SHELL	CHASSIS GROUND	< 1		
J1-13	J4 OUTER SHELL	CHASSIS GROUND	< 1		
J3-1	J3-5	1553 INTERFACE DATA A HI	>100K		
J3-1	J3-4	1553 INTERFACE DATA A HI	>100K		
J3-2	J3-5	1553 INTERFACE DATA A LO	>100K		
J3-2	J3-4	1553 INTERFACE DATA A LO	>100K		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 2
Quiet Power Bus Operational Power Test (Paragraph 3.3.3.1.1)

Required Quiet Bus Voltage QBV (Volts)	Measured QBV (Volts)	Maximum Peak Quiet Bus Current QBI (Amps)	Required Power (Watts)	Calculated Peak Power (QBV x QBI) (Watts)	Pass/Fail
26.90 - 27.10			$\leq$31		
28.90 - 29.10			$\leq$31		
30.90 - 31.10			$\leq$31		

Required Quiet Bus Voltage QBV (Volts)	Measured QBV (Volts)	Average Quiet Bus Current QBI (Amps)	Required Power (Watts)	Calculated Average Power (QBV x QBI) (Watts)	Pass/Fail
26.90 - 27.10			$\leq$25		
28.90 - 29.10			$\leq$25		
30.90 - 31.10			$\leq$25		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 3

Quiet Power Bus Operational Power Test (LPT) (Paragraph 3.3.3.1.2)

Required Quiet Bus Voltage QBV (Volts)	Measured QBV (Volts)	Average Quiet Bus Current QBI (Amps)	Required Power (Watts)	Calculated Average Power (QBV x QBI) (Watts)	Pass/Fail
28.90 - 29.10			<25		

TEST DATA SHEET NO. 4
Quiet Power Bus Turn On Transient Test (Paragraph 3.3.3.1.3)

+31 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	Amps	<8.3 Amps	
Pulse Width	ms	<150 ms	
Rate of Change(slope): dI/dT	ma/μs	<640 mA/μs	

+29 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	Amps	<8.3 Amps	
Pulse Width	ms	<150 ms	
Rate of Change(slope): dI/dT	ma/μs	<640 mA/μs	

+27 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	Amps	<8.3 Amps	
Pulse Width	ms	<150 ms	
Rate of Change(slope): dI/dT	ma/μs	<640 mA/μs	

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 5

Noisy Power Bus Operational Power Test (Paragraph 3.3.3.2.1)

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Required Peak Current (Amps)	Maximum Peak Noisy Bus Current NBI (Amps)	Required Peak Power (Watts)	Calculated Peak Power (NBV x NBI) (Watts)	Pass/Fail
26.90 - 27.10		≤1.2		≤40		
28.90 - 29.10		≤1.2		≤40		
30.90 - 31.10		≤1.2		≤40		

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Average Noisy Bus Current NBI (Amps)	Required Average Power (Watts)	Calculated Average Power (NBV x NBI) (Watts)	Pass/Fail
26.90 - 27.10			≤6		
28.90 - 29.10			≤6		
30.90 - 31.10			≤6		

Required Noisy Bus Voltage (NBV) (Volts)	Measured NBV (Volts)	Bus Current During the I/H,D.Period	Pass/Fail
26.95 - 27.05		ma * ma **	Not Applicable
28.75 - 29.05		ma * ma **	Not Applicable
3095 - 31.05		ma * ma **	Not Applicable

* Between Beams
** Between Cal Tests

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________

Test Systems Engineer Date

Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 6

Noisy Power Bus Turn On Transient Test (Paragraph 3.3.3.2.2)

+31 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	Amps	<9.6 Amps	
Pulse Width	ms	<100 ms	
Rate of Change(slope): dI/dT	ma/µs	<846 mA/µs	

+29 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	Amps	<9.6 Amps	
Pulse Width	ms	<100 ms	
Rate of Change(slope): dI/dT	ma/µs	<846 mA/µs	

+27 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	Amps	<9.6 Amps	
Pulse Width	ms	<100 ms	
Rate of Change(slope): dI/dT	ma/µs	<846 mA/µs	

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________

Circle Test: 1st CPT Final CPT

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 7

Passive Analog Interface Test (Paragraph 3.3.4)

Number	Thermistor	Required Temperature (°Celsius)	Measured Temperature (Celsius)	Pass/Fail
1	A2 SCAN MOTOR	* ± 5		
2	A2 RF SHELF # 1	* ± 5		
3	A2 WARM LOAD	* ± 5		
4	A2 RF SHELF # 2	* ± 5		

* The measured temperature of the unit environment.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________

Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 8
Instrument Commanding Test (Paragraph 3.3.5.2)

Step	Instrument Status	(Y)es / (N)o
12	Is A2 motor scanning?	
13	Full Scan Mode command received?	
14	Did A2 motor stop scanning?	
15	Is A2 motor scanning?	
16	Reflector positioned looking at warm loads?	
17	Reflector positioned looking at nadir?	
18	Reflector positioned looking at cold cal 1?	
19	Reflector positioned looking at cold cal 4?	
20	Reflector positioned looking at cold cal 3?	
21	Reflector positioned looking at cold cal 2?	
22	Reflector positioned looking at cold cal 1?	
23	Did C&DH processor reset?	

Yes = Pass No = Fail

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 9 (sheet 1 of 3)
Science and Engineering Data Test (Full Scan Mode) (Paragraph 3.3.5.3.1)

Step	Instrument Status	(Y)es / (N)o
1	Full Scan Mode command received?	
2	ENGR OK message seen?	
3	Unit running in full scan mode?	

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
4a	1-2	Packet ID		0000100100100010	
4b	3-4	Packet Length		0000000101011101	
4c	5-6	Unit Serial Number		0000010000000000	
4d	7-8	Instrument Mode/ Status		1000100000000010	

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
4f	Review All Scene Data	12500-20500	

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
4g	262-298	Review All PRT Data	10-40 degrees C	
4g	300	Temperature Sensor Reference	23244-26317 counts	

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
4h	Antenna in Full Scan Mode		YES	
	Antenna in Warm Cal Mode		NO	
	Antenna in Cold Cal Mode		NO	
	Antenna in Nadir Mode		NO	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	
	ADC Latchup Flag		ONE	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 9 (sheet 2 of 3)
Science and Engineering Data Test (Full Scan Mode) (Paragraph 3.3.5.3.1)

A2 REFLECTOR POSITIONS (Step 4e)				
BP	Element	Position (*)	Required (**) +/- 5	(P)ass/ (F)ail
1	12			
2	20			
3	28			
4	36			
5	44			
6	52			
7	60			
8	68			
9	76			
10	84			
11	92			
12	100			
13	108			
14	116			
15	124			
16	132			
17	140			
18	148			
19	156			
20	164			
21	172			
22	180			
23	188			
24	196			
25	204			
26	212			
27	220			
28	228			
29	236			
30	244			
CC	252			
WC	304			

* Actual counts from printout. Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 9 (sheet 3 of 3)
Science and Engineering Data Test (Full Scan Mode) (Paragraph 3.3.5.3.1)

ENGINEERING DATA				
Step	Description	Measured***	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	
	Signal Processor (+15 VDC)		+14 to +16 volts	
	Signal Processor (-15 VDC)		-14 to -16 volts	
	Scan Drive (+5 VDC)		+4 to +6 volts	
	Scan Drive (+15 VDC)		+14 to +16 volts	
	Scan Drive (-15 VDC)		-14 to -16 volts	
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	
	LO Channel 1		+9 to +11 volts	
	LO Channel 2		+9 to +11 volts	
	Quiet Bus Current		≤ 1 Amps	
	Noisy Bus Current		≤ 150 milliamps	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 10 (Sheet 1 of 2)
Science and Engineering Data Test (Warm Cal Mode) (Paragraph 3.3.5.3.2)

Step	Instrument Status	(Y)es / (N)o
1	Warm Cal Mode command received?	
2	ENGR OK message seen?	
3	Reflector positioned at warm load?	

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
4a	1-2	Packet ID		0000100100100001	
4b	3-4	Packet Length		0000000101000101	
4c	5-6	Unit Serial Number		0000010000000000	
4d	7-8	Instrument Mode/ Status		1000100000000100	

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
4f	Review All Scene Data	12500-20500	

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
4g	262-298	Review All PRT Data	10-40 degrees C	
4g	300	Temperature Sensor Reference	23244-26317 counts	

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
4h	Antenna in Full Scan Mode		NO	
	Antenna in Warm Cal Mode		YES	
	Antenna in Cold Cal Mode		NO	
	Antenna in Nadir Mode		NO	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	
	ADC Latchup Flag		ONE	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 10 (sheet 2 of 2)
Science and Engineering Data Test (Warm Cal Mode) (Paragraph 3.3.5.3.2)

A2 REFLECTOR POSITIONS (Step 4e)			
Beam Positions	Position Range (*)	Required (**) +/- 5 counts	(P)ass/ (F)ail
1-30			

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.

** Required counts from AE26002/2 TDS 6 +/- 5 counts for Warm Cal Position

ENGINEERING DATA				
Step	Description	Measured***	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	
	Signal Processor (+15 VDC)		+14 to +16 volts	
	Signal Processor (-15 VDC)		-14 to -16 volts	
	Scan Drive (+5 VDC)		+4 to +6 volts	
	Scan Drive (+15 VDC)		+14 to +16 volts	
	Scan Drive (-15 VDC)		-14 to -16 volts	
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	
	LO Channel 1		+9 to +11 volts	
	LO Channel 2		+9 to +11 volts	
	Quiet Bus Current		≤ 1 Amps	
	Noisy Bus Current		≤ 150 milliamps	

*** Rewriting printout data on this data sheet is optional.

Instrument Mode	Noisy Bus Current (ma)	Pass/Fail
Warm Cal Scanner ON		Not Applicable
Cold Cal Scanner ON		Not Applicable
Nadir Scanner ON		Not Applicable

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 11 (Sheet 1 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

Step	Instrument Status	(Y)es / (N)o
1	Cold Cal Mode command received?	
2	ENGR OK message seen?	
3	Reflector positioned at cold cal position 1?	
9	Cold Cal Position 2 command received?	
10	ENGR OK message seen?	
11	Reflector positioned at cold cal position 2?	
18	Cold Cal Position 3 command received?	
19	ENGR OK message seen?	
20	Reflector positioned at cold cal position 3?	
27	Cold Cal Position 4 command received?	
28	ENGR OK message seen?	
29	Reflector positioned at cold cal position 4?	

Yes = Pass   No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
7a	1-2	Packet ID		0000100100100001	
7b	3-4	Packet Length		0000000101000101	
7c	5-6	Unit Serial Number		0000010000000000	
7d	7-8	Instrument Mode/ Status		1000100000001000	
16a	7-8	Instrument Mode/ Status		1000100000101000	
25a	7-8	Instrument Mode/ Status		1000100001001000	
34a	7-8	Instrument Mode/ Status		1000100001101000	

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
7f	Review All Scene Data	12500-20500	

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
7g	262-298	Review All PRT Data	10-40 degrees C	
7g	300	Temperature Sensor Reference	23244-26317 counts	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006   Shop Order: __________   S/N: __________
Circle Test: 1st CPT   Final CPT   Sub CPT __________   LPT __________

Test Systems Engineer   Date

Customer Representative   Date

Quality Control   Date

TEST DATA SHEET NO. 11 (sheet 2 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
7h	Antenna in Full Scan Mode		NO	
	Antenna in Warm Cal Mode		NO	
	Antenna in Cold Cal Mode		YES	
	Antenna in Nadir Mode		NO	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	
	ADC Latchup Flag		ONE	
16b	Cold Cal Position LSB		ONE	
	Cold Cal Position MSB		ZERO	
25b	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ONE	
34b	Cold Cal Position LSB		ONE	
	Cold Cal Position MSB		ONE	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 11 (sheet 3 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

A2 REFLECTOR POSITIONS (Step 7e)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30			

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #1

A2 REFLECTOR POSITIONS (Step 16c)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30			

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #2

A2 REFLECTOR POSITIONS (Step 25c)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30			

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #3

A2 REFLECTOR POSITIONS (Step 34c)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30			

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #4

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 11 (sheet 4 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

A2 REFLECTOR POSITION (Step 5)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 1			

* Actual count from printout (Only beam position Cold Cal 1).
** Required count from AE26002/2 TDS 6 ± 5 counts for Cold Cal 1

A2 REFLECTOR POSITION (Step 13)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 2			

* Actual count from printout (Only beam position Cold Cal 2).
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal 2

A2 REFLECTOR POSITION (Step 22)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 3			

* Actual count from printout (Only beam position Cold Cal 3).
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal 3

A2 REFLECTOR POSITION (Step 31)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 4			

* Actual count from printout (Only beam position Cold Cal 4).
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal 4

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 11 (sheet 5 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

ENGINEERING DATA				
Step	Description	Measured*	Required	(P)ass/(F)ail
7i	Signal Processor (+5 VDC)		+4 to +6 volts	
	Signal Processor (+15 VDC)		+14 to +16 volts	
	Signal Processor (-15 VDC)		-14 to -16 volts	
	Scan Drive (+5 VDC)		+4 to +6 volts	
	Scan Drive (+15 VDC)		+14 to +16 volts	
	Scan Drive (-15 VDC)		-14 to -16 volts	
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	
	LO Channel 1		+9 to +11 volts	
	LO Channel 2		+9 to +11 volts	
	Quiet Bus Current		≤ 1 Amps	
	Noisy Bus Current		≤ 150 milliamps	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 12 (Sheet 1 of 2)
Science and Engineering Data Test (Nadir Mode) (Paragraph 3.3.5.3.4)

Step	Instrument Status	(Y)es / (N)o
1	Nadir Mode command received?	
2	ENGR OK message seen?	
3	Reflector positioned at nadir position?	

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
4a	1-2	Packet ID		0000100100100001	
4b	3-4	Packet Length		0000000101000101	
4c	5-6	Unit Serial Number		0000010000000000	
4d	7-8	Instrument Mode/ Status		1000100000010000	

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
4f	Review All Scene Data	12500-20500	

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
4g	262-298	Review All PRT Data	10-40 degrees C	
4g	300	Temperature Sensor Reference	23244-26317 counts	

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
4h	Antenna in Full Scan Mode		NO	
	Antenna in Warm Cal Mode		NO	
	Antenna in Cold Cal Mode		NO	
	Antenna in Nadir Mode		YES	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	
	ADC Latchup Flag		ONE	

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A1 System P/N 1356008 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 12 (sheet 2 of 2)
Science and Engineering Data Test (Nadir Mode) (Paragraph 3.3.5.3.4)

A2 REFLECTOR POSITIONS (Step 4e)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30			
* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.			
** Required counts from AE26002/2 TDS 6 +/- 5 counts for "true" nadir position.			

ENGINEERING DATA				
Step	Description	Measured***	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	
	Signal Processor (+15 VDC)		+14 to +16 volts	
	Signal Processor (-15 VDC)		-14 to -16 volts	
	Scan Drive (+5 VDC)		+4 to +6 volts	
	Scan Drive (+15 VDC)		+14 to +16 volts	
	Scan Drive (-15 VDC)		-14 to -16 volts	
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	
	LO Channel 1		+9 to +11 volts	
	LO Channel 2		+9 to +11 volts	
	Quiet Bus Current		≤ 1 Amps	
	Noisy Bus Current		≤ 150 milliamps	

*** Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 13
1553 Bus Interface Test (Paragraph 3.3.5.4)

ATTACH BUS A WAVEFORM

		Pass/Fail
BUS A AMPLITUDE ____________	: 18.0 - 27.0 Vp-p	_______
BUS A RISE TIME ____________	: 100 - 300 nsec	_______

ATTACH BUS B WAVEFORM

		Pass/Fail
BUS B AMPLITUDE ____________	: 18.0 - 27.0 Vp-p	_______
BUS B RISE TIME ____________	: 100 - 300 nsec	_______

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________

____
Test Systems Engineer Date

______________________________ ______________________________
Customer Representative Date Quality Control Date

TEST DATA SHEET NO. 14
Test Point Interface Test (8 Second Sync Pulse TP) (Paragraph 3.3.6.1)

8 SECOND SYNC PULSE TEST POINT

Attach Photograph or Plot Here or to Back of TDS

8 SECOND SYNC PULSE TEST POINT				
Step	Parameter	Measured	Required	(P)ass / (F)ail
2	Pulse Length	seconds	8 seconds +/- 10%	

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 15
Test Point Interface Test (Integrate/Hold and Dump TPs) (Paragraph 3.3.6.2)

INTEGRATE/HOLD AND DUMP TEST POINTS

Attach Photograph or Plot Here or to Back of TDS

INTEGRATE/HOLD SIGNAL TEST POINT				
Step	Parameter	Measured	Required	(P)ass / (F)ail
4	Time Measured (A)*	milliseconds	158 ±5ms	
4	Time Measured (B)*	milliseconds	38 -46 ms	
4	Time Measured (A&B)*	milliseconds	200 ±5ms	

DUMP SIGNAL TEST POINT				
Step	Parameter	Measured	Required	(P)ass / (F)ail
4	Time Measured (D)*	ms	9-15 ms	

* Refer to Figure 18 for Waveform Definition

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 16
Test Point Interface Test (Radiometer Channel Analog Output TPs) (Paragraph 3.3.6.3)

RADIOMETER CHANNEL ANALOG OUTPUT TEST POINTS

Attach Photographs or Plots Here or to Back of TDS

RADIOMETER CHANNEL ANALOG OUTPUT TEST POINTS							
Channel	Integration Time Measured (E)*	Integration Time Required (ms)	Hold Time Measured (F)*	Hold Time Required (ms)	Dump Time Measured (D)*	Dump Time Required (ms)	(P)ass / (F)ail
1	ms	158 ±5ms	ms	29-35	ms	9-15	
2	ms	158 ±5ms	ms	29-35	ms	9-15	

* Refer to Figure 18 for Waveform Definition

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 17

Test Point Interface Test (GSE Modes) (Paragraphs 3.3.6.4 - 3.3.6.9)

	GSE MODES					
	1	2	3	4	5	7
	MODE OBSERVED? (YES/NO)					
	DATA REVIEWED? (YES/NO)					
Printout data						
Packet ID						
Packet Length						
Unit Serial Number						
Instrument Mode/Status						
Reflector Positions						
Radiometer Scene Data						
PRT Temperature Data						
Engineering Data						

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________

Circle Test: 1st CPT Final CPT

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

TEST DATA SHEET NO. 18

Radiometer Functional Performance Test (Relative NEΔT Measurements*) (Paragraph 3.3.7.1)

RELATIVE NEΔT MEASUREMENTS			
Channel Number	Average NEΔT for 5 Data Sets (K)	Required** NEΔT (K)	Pass/Fail
1		0.30	
2		0.30	

P = Pass F = Fail

* Baseline data for acceptance tests. Use 1st CPT data along with specification value for pass/fail criteria

** For reference only

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________

Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

____
Test Systems Engineer Date

____
Customer Representative Date

____
Quality Control Date

TEST DATA SHEET NO. 19
Channel Identification Test (Paragraph 3.3.8)

Channel Number	Sweeper Frequency Setting (GHz)	Polarization (H/V)	Radiometric Data (Δ Counts)	Channel Verified (Yes/No)
1	23.8	V		
2	31.4	V		

EOS/AMSU-A2 System P/N 1356006 Shop Order: __________ S/N: __________
Circle Test: 1st CPT Final CPT Sub CPT __________ LPT __________

Test Systems Engineer Date

Customer Representative Date

Quality Control Date

DOCUMENT APPROVAL SHEET

GENCORP AEROJET

TITLE	DOCUMENT NO.
Process Specification EOS/AMSU-A2, System Comprehensive and Limited Performance Tests Test Procedure	AE-26156/10B 27 August 1998

INPUT FROM: A. Nieto	DATE	CDRL: 409	SPECIFICATION ENGINEER:	DATE
CHECKED BY:	DATE		JOB NUMBER:	DATE

APPROVED SIGNATURES	DEPT. NO.	DATE
Product Team Leader (A. Nieto) A. Nieto	8341	9/8/98
Technical Director/PMO (R. Hauerwaas) R V Hauerwaas	4001	9/9/98
Configuration Management (J. Cavanaugh) J Cavanaugh	8361	9/14/98

Approved as Final per customer's letter dated 3 September 1998 (ECN CAMSU-1888)

By my signature, I certify the above document has been reviewed by me and concurs with the technical requirements related to my area of responsibility.

RELEASE (Data Center) FINAL

Acunda 9-14-98

Report 10975
16 Sep 98

TEST DATA SHEET 1
TAPE IDENTIFICATION
(Paragraph 4.1)

ENTER TAPE LOADED:

E2.EXE;29

Circle Software being validated: A1 (A2)

Customer Representative
(Flight Hardware Only)

Engineer Al Cisneros
Al Cisneros

Quality Assurance 9/17/98
M. Santos

QC 173

Shop Order No.: 509734 Date: September 10, 1998

OPER 0586

Report 10975
16 Sep 98

TEST DATA SHEET 2
LOW-RATE SCIENCE DATA ACQUISITION
FULL SCAN MODE
(Paragraph 4.3)

Test	Expected Results Table Used	Fail	Pass
Case 1	III. A1 Raw Input Data Stream Values	N/A	
	IV. A2 Raw Input Data Stream Values		X
	V. A1 Temperature Sensor Limits	N/A	
	VI. A2 Temperature Sensor Limits		X
	VII. A1 Engineering Data	N/A	
	VIII. A2 Engineering Data		X
	XI. Reflector Positions A1-1	N/A	
	XII. Reflector Positions A1-2	N/A	
	XIII. Reflector Positions A2		X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Circle Software being validated: A1 (A2)

Customer Representative [signature]
(Flight Hardware Only)

Engineer Al Cisneros
Al Cisneros

Quality Assurance [signature] QC 173 9/17/98
M. Santos

Shop Order No.: 509734
OPER 0586

Date: September 10, 1998

TEST DATA SHEET 3
LOW-RATE SCIENCE DATA ACQUISITION
WARM CAL MODE
(Paragraph 4.4)

Test	Expected Results Table Used	Fail	Pass
Case 2	III. A1 Raw Input Data Stream Values	N/A	
	IV. A2 Raw Input Data Stream Values		X
	V. A1 Temperature Sensor Limits	N/A	
	VI. A2 Temperature Sensor Limits		X
	VII. A1 Engineering Data	N/A	
	VIII. A2 Engineering Data		X
	XI. Reflector Positions A1-1	N/A	
	XII. Reflector Positions A1-2	N/A	
	XIII. Reflector Positions A2		X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Circle Software being validated: A1 (A2)

Customer Representative ____ (Flight Hardware Only)

Engineer Al Cisneros
Al Cisneros

Quality Assurance ____ QC 173 9/17/98
M. Santos

Shop Order No.: 509734
0702 0586

Date: September 10, 1998

TEST DATA SHEET 4
LOW-RATE SCIENCE DATA ACQUISITION
COLD CAL MODE
(Paragraph 4.5)

Test	Expected Results Table Used	Fail	Pass
Case 3	III. A1 Raw Input Data Stream Values	N/A	
	IV. A2 Raw Input Data Stream Values		X
	V. A1 Temperature Sensor Limits	N/A	
	VI. A2 Temperature Sensor Limits		X
	VII. A1 Engineering Data	N/A	
	VIII. A2 Engineering Data		X
	XI. Reflector Positions A1-1	N/A	
	XII. Reflector Positions A1-2	N/A	
	XIII. Reflector Positions A2		X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Also passed Cold Cal Positions 1 through 4 tests.

Circle Software being validated: A1 (A2)

Customer Representative (Flight Hardware Only) ________ Engineer ________ Al Cisneros

Quality Assurance ________ M. Santos QC 173 9/17/98

Shop Order No.: 509734 Date: September 10, 1998

OPEX 0586

TEST DATA SHEET 5
LOW-RATE SCIENCE DATA ACQUISITION
NADIR MODE
(Paragraph 4.6)

Test	Expected Results Table Used	Fail	Pass
Case 4	III. A1 Raw Input Data Stream Values	N/A	
	IV. A2 Raw Input Data Stream Values		X
	V. A1 Temperature Sensor Limits	N/A	
	VI. A2 Temperature Sensor Limits		X
	VII. A1 Engineering Data	N/A	
	VIII. A2 Engineering Data		X
	XI. Reflector Positions A1-1	N/A	
	XII. Reflector Positions A1-2	N/A	
	XIII. Reflector Positions A2		X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Circle Software being validated: A1 (A2)

Customer Representative (Flight Hardware Only) Anthony Tang Engineer Al Cisneros
Al Cisneros

Quality Assurance M. Santos QC 173 9/17/98
M. Santos

Shop Order No.: 509734 Date: September 10, 1998
UPEX 0586

TEST DATA SHEET 6
UNPOWERED TEMPERATURES
(Paragraph 4.7)

Test	Expected Results Table Used	Fail	Pass
Case 5	IX. A1 Passive Analog Temperature Data X. A2 Passive Analog Temperature Data	N/A	X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Circle Software being validated: A1 (A2)

Customer Representative (Flight Hardware Only)

Engineer Al Cisneros
Al Cisneros

Quality Assurance 9/17/98
M. Santos

QC 173

Shop Order No.: 509734
OPER 0586

Date: September 10, 1998

TEST DATA SHEET 7
ERROR LIMITS
(Paragraph 4.8)

Test	Expected Results Table Used	Fail	Pass
Case 6	NONE		

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Where able to change limits. Got errors messages as outlined. Therefore passed.

Circle Software being validated: A1 (A2)

Customer Representative (Flight Hardware Only)) [signature]

Engineer Al Cisneros
Al Cisneros

Quality Assurance [signature] QC 173 9/14/98
M. Santos

Shop Order No.: 509734
OPOR 0586

Date: September 14, 1998

TEST DATA SHEET 8
PLAYBACK
(Paragraph 4.9)

Test	Expected Results Table Used	Fail	Pass
Case 7	V. A1 Temperature Sensor Limits VI. A2 Temperature Sensor Limits	N/A	X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Circle Software being validated: A1 (A2)

Customer Representative ~~Anthony Lopez~~ Engineer Al Cisneros
(Flight Hardware Only)

Al Cisneros

Quality Assurance M Santos QC 173 9/17/98
M. Santos

Shop Order No.: 509734 Date: September 14, 1998
OPER 0586

TEST DATA SHEET 9
ENGINEERING DATA FROM TAPE
(Paragraph 4.10)

Test	Expected Results Table Used	Fail	Pass
Case 8	VII. A1 Engineering Data VIII. A2 Engineering Data	N/A	X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Circle Software being validated: A1 (A2)

Customer Representative ______ Engineer Al Cisneros
(Flight Hardware Only)
Al Cisneros

Quality Assurance ______ QC 173 9/14/98
M. Santos

Shop Order No.: 509734 Date: September 14, 1998

OP62 0586

TEST DATA SHEET 10
NEΔT/CTE
(Paragraph 4.11)

Test	Expected Results Table Used	Fail	Pass
Case 9	V. A1 Temperature Sensor Limits	N/A	
	VI. A2 Temperature Sensor Limits		X
	VII. A1 Engineering Data	N/A	
	VIII. A2 Engineering Data		X

NOTE: Place "N/A" for those tests not being tested.

NOTE: If discrepancy is found between the actual results and the expected results, attach the printout with the discrepancy circled or use comments area below to describe discrepancy.

COMMENTS:

Formal test 9.1 passed using tables VI & VIII, "Pre-test 9.1" and "Formal 9.1" printouts matched.
Formal test 9.2 passed.
Formal test 9.3 passed, "Pre-test 9.3" and "Formal 9.3" printouts matched.
Formal test 9.3 passed, "Pre-test 9.3" and "Formal 9.3" printouts matched.

Circle Software being validated: A1 (A2)

Customer Representative (Flight Hardware Only) [signature]

Engineer Al Cisneros
Al Cisneros

Quality Assurance [signature] QC 1763 9/17/98
M. Santos

Shop Order No.: 509734
OPCR 0586

Date: September 14, 1998

SHEET 62 OF
ECN NO. 1826

TEST DATA SHEET NO. 1 (Sheet 1 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J1 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	+29V QUIET PWR BUS	> 1M	>1MΩ	PASS
J1-2	+29V QUIET PWR BUS	> 1M	> 1MΩ	
J1-3	29V QUIET BUS RTN	> 1M	> 1MΩ	
J1-4	29V QUIET BUS RTN	> 1M		
J1-5	+29V NOISY PWR BUS	> 1M		
J1-6	+29V NOISY PWR BUS	> 1M		
J1-7	29V NOISY BUS RTN	> 1M		
J1-8	29V NOISY BUS RTN	> 1M		
J1-9	SURVIVAL PWR BUS A	> 1M		
J1-10	SURVIVAL BUS A RTN	> 1M		
J1-11	SURVIVAL PWR BUS A	> 1M		
J1-12	SURVIVAL BUS A RTN	> 1M	>1MΩ	
J1-13	CHASSIS GROUND	< 1	0.13Ω	
J1-14	+29V QUIET PWR BUS	> 1M	>1MΩ	
J1-15	+29V QUIET PWR BUS	> 1M		
J1-16	29V QUIET BUS RTN	> 1M		
J1-17	29V QUIET BUS RTN	> 1M		
J1-18	+29V NOISY PWR BUS	> 1M		
J1-19	+29V NOISY PWR BUS	> 1M		
J1-20	29V NOISY BUS RTN	> 1M		
J1-21	29V NOISY BUS RTN	> 1M		
J1-22	SURVIVAL PWR BUS B	> 1M		
J1-23	SURVIVAL BUS B RTN	> 1M		
J1-24	SURVIVAL PWR BUS B	> 1M		
J1-25	SURVIVAL BUS B RTN	> 1M	>1MΩ	PASS

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

ENG 258 7-16-98
Test Systems Engineer Date

261 JUL 17 1998
Quality Control Date

2377 9/24/98
Customer Representative Date

TEST DATA SHEET NO. 1 (Sheet 2 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J2 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J2-1	A2 MOTOR TEMP HI	> 1M	> 1M	PASS
J2-2	A2 MOTOR TEMP LO	> 1M		
J2-3	A2 RECEIVER TEMP 1 HI	> 1M		
J2-4	A2 RECEIVER TEMP 1 LO	> 1M		
J2-5	A2 WARM LOAD TEMP HI	> 1M		
J2-6	A2 WARM LOAD TEMP LO	> 1M		
J2-7	No Connection	> 1M		
J2-8	No Connection	> 1M		
J2-9	No Connection	> 1M		
J2-10	No Connection	> 1M		
J2-11	No Connection	> 1M		
J2-12	No Connection	> 1M		
J2-13	No Connection	> 1M		
J2-14	No Connection	> 1M		
J2-15	No Connection	> 1M		
J2-16	No Connection	> 1M		
J2-17	No Connection	> 1M		
J2-18	No Connection	> 1M		
J2-19	No Connection	> 1M		
J2-20	No Connection	> 1M		
J2-21	No Connection	> 1M		
J2-22	A2 RECEIVER TEMP 2 HI	> 1M		
J2-23	A2 RECEIVER TEMP 2 LO	> 1M		
J2-24	No Connection	> 1M		
J2-25	No Connection	> 1M		
J2-26	No Connection	> 1M		
J2-27	No Connection	> 1M		
J2-28	No Connection	> 1M		
J2-29	No Connection	> 1M		
J2-30	No Connection	> 1M		
J2-31	No Connection	> 1M		
J2-32	No Connection	> 1M		
J2-33	No Connection	> 1M		
J2-34	No Connection	> 1M		
J2-35	No Connection	> 1M		
J2-36	No Connection	> 1M		
J2-37	No Connection	> 1M	> 1MΩ	PASS

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202

Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

ENG 252 7-16-98
Test Systems Engineer Date

261 JUL 17 1998
Quality Control Date

2377 9/24/98
Customer Representative Date

SHEET 64 OF ____
ECP NO. 1826

TEST DATA SHEET NO. 1 (Sheet 3 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J3 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J3-1	1553 INTERFACE DATA A HI	> 100K	>100K	PASS
J3-2	1553 INTERFACE DATA A LO	> 100K	>100K	
J3-3	No Connection	> 1M	>1M	
J3-4	1553 INTERFACE DATA B LO	> 100K 7/16/98 ENG 252	>100K	
J3-5	1553 INTERFACE DATA B HI	> 100K	>100K	
J3-6	1553 INTERFACE DATA A SHIELD	< 1	0.74 ~~0.9~~ Ω	
J3-7	No Connection	> 1M	>1M	
J3-8	No Connection	> 1M	>1M	
J3-9	1553 INTERFACE DATA B SHIELD	< 1	0.42 Ω	PASS

EOS/AMSU-A2 System P/N ~~1356006~~ Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

ENG 252 7-16-98
Test Systems Engineer Date

C L 2377 9/24/98
Customer Representative Date

TA 197 JUL 17 1998
Quality Control Date

TEST DATA SHEET NO. 1 (Sheet 4 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

J4 of Spacecraft Interface				
From Chassis Ground to	Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J4-1	CHASSIS GROUND	< 1	0.22Ω	PASS
J4-2	8 SECOND SYNC PULSE TP	> 100K	>100KΩ	
J4-3	No Connection	> 1M	>1M	
J4-4	No Connection	> 1M	>1M	
J4-5	I/H & DUMP RTN (2/3)	< 1	0.37Ω	
J4-6	DUMP COMMAND TP	> 100K	>100K	
J4-7	No Connection	> 1M	>1M	
J4-8	CH 1 ANALOG OUT TP	> 100K	>100K	
J4-9	CH 2 ANALOG OUT TP	> 100K	>100K	
J4-10	No Connection	> 1M	>1M	
J4-11	No Connection	> 1M	>1M	
J4-12	No Connection	> 1M	>1M	
J4-13	No Connection	> 1M	>1M	
J4-14	No Connection	> 1M	>1M	
J4-15	No Connection	> 1M	>1M	
J4-16	No Connection	> 1M	>1M	
J4-17	GSE COMMAND LSB	> 5K	>5KΩ	
J4-18	GSE COMMAND MSB-1	> 5K	9.9K	
J4-19	No Connection	> 1M	>1M	
J4-20	1.248 MHz CLOCK TP	> 100K	>100K	
J4-21	1.248 MHz CLOCK RTN (1)	< 1	0.37Ω	
J4-22	No Connection	> 1M	>1M	
J4-23	I/H COMMAND TP	> 100K	>100K	
J4-24	No Connection	> 1M	>1M	
J4-25	No Connection	> 1M	>1M	
J4-26	ANALOG OUT RTN (2/3)	< 1	0.3Ω	
J4-27	No Connection	> 1M	>1M	
J4-28	No Connection	> 1M		
J4-29	No Connection	> 1M		
J4-30	No Connection	> 1M		
J4-31	No Connection	> 1M		
J4-32	No Connection	> 1M		
J4-33	No Connection	> 1M	>1M	
J4-34	No Connection	> 1M		
J4-35	GSE COMMAND MSB	> 5K	9.98K	
J4-36	GSE COMMAND RTN (1)	< 1	0.37Ω	
J4-37	No Connection	> 1M	>1M	PASS

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

ENG 252 7-16-98
Test Systems Engineer Date

JUL 17 1998
Quality Control Date

2377 9/24/98
Customer Representative Date

SHEET 66 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 1 (Sheet 5 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

6-6-98

Source	Destination	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-1	J1-2	+29V QUIET PWR BUS	<1	0.5Ω	PASS
J1-1	J1-14	+29V QUIET PWR BUS	<1	0.37Ω	
J1-1	J1-15	+29V QUIET PWR BUS	<1	0.37Ω	
J1-3	J1-4	29V QUIET BUS RTN	<1	0.33Ω	
J1-3	J1-16	29V QUIET BUS RTN	<1	0.35Ω	
J1-3	J1-17	29V QUIET BUS RTN	<1	0.32Ω	
J1-5	J1-6	+29V NOISY PWR BUS	<1	0.34Ω	
J1-5	J1-18	+29V NOISY PWR BUS	<1	0.34Ω	
J1-5	J1-19	+29V NOISY PWR BUS	<1	0.39Ω	
J1-7	J1-8	29V NOISY BUS RTN	<1	0.35Ω	
J1-7	J1-20	29V NOISY BUS RTN	<1	0.31Ω	
J1-7	J1-21	29V NOISY BUS RTN	<1	0.34Ω	
J1-9	J1-11	SURVIVAL PWR BUS A	<1	0.30Ω	
J1-10	J1-12	SURVIVAL BUS A RTN	<1	0.31Ω	
J1-22	J1-24	SURVIVAL PWR BUS B	<1	0.27Ω	
J1-23	J1-25	SURVIVAL BUS B RTN	<1	0.37Ω	
J1-1	J1-5	+29V QUIET PWR BUS	> 1M	>1MΩ	
J1-1	J1-7	+29V QUIET PWR BUS	> 1M		
J1-1	J1-9	+29V QUIET PWR BUS	> 1M		
J1-1	J1-10	+29V QUIET PWR BUS	> 1M		
J1-1	J1-22	+29V QUIET PWR BUS	> 1M		
J1-1	J1-23	+29V QUIET PWR BUS	> 1M		
J1-3	J1-5	29V QUIET BUS RTN	> 1M		
J1-3	J1-7	29V QUIET BUS RTN	> 1M		
J1-3	J1-9	29V QUIET BUS RTN	> 1M	>1M	PASS

ENG 252
QC 236

EOS/AMSU-A2 System P/N ~~1356006~~ Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

ENG 252 7-16-98
Test Systems Engineer Date

9/24/98
Customer Representative Date

JUL 17 1998
Quality Control Date

TEST DATA SHEET NO. 1 (Sheet 6 of 6)
Grounding Interface Test (Paragraph 3.3.2, Step 2)

Source	Destination	Source Pin Description	Required Resistance (Ohms)	Measured Value (Ohms)	Pass/Fail
J1-3	J1-10	29V QUIET BUS RTN	> 1M	>1MΩ	PASS
J1-3	J1-22	29V QUIET BUS RTN	> 1M		
J1-3	J1-23	29V QUIET BUS RTN	> 1M		
J1-5	J1-9	+29V NOISY PWR BUS	> 1M		
J1-5	J1-10	+29V NOISY PWR BUS	> 1M		
J1-5	J1-22	+29V NOISY PWR BUS	> 1M		
J1-5	J1-23	+29V NOISY PWR BUS	> 1M		
J1-7	J1-9	29V NOISY BUS RTN	> 1M		
J1-7	J1-10	29V NOISY BUS RTN	> 1M		
J1-7	J1-22	29V NOISY BUS RTN	> 1M		
J1-7	J1-23	29V NOISY BUS RTN	> 1M		
J1-9	J1-22	SURVIVAL PWR BUS A	> 1M		
J1-9	J1-23	SURVIVAL PWR BUS A	> 1M		
J1-10	J1-22	SURVIVAL BUS A RTN	> 1M		
J1-10	J1-23	SURVIVAL BUS A RTN	> 1M	>1MΩ	
J1-13	J1 OUTER SHELL	CHASSIS GROUND	< 1	0.16Ω	
J1-13	J2 OUTER SHELL	CHASSIS GROUND	< 1	0.40Ω	
J1-13	J3 OUTER SHELL	CHASSIS GROUND	< 1	0.33Ω	
J1-13	J4 OUTER SHELL	CHASSIS GROUND	< 1	0.27Ω	
J3-1	J3-5	1553 INTERFACE DATA A HI	>100K	>100K	
J3-1	J3-4	1553 INTERFACE DATA A HI	>100K		
J3-2	J3-5	1553 INTERFACE DATA A LO	>100K		
J3-2	J3-4	1553 INTERFACE DATA A LO	>100K	>100K	PASS

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

ENG 252 7-16-98
Test Systems Engineer Date

QA 74 JUL 17 1998
Quality Control Date

9/24/98
Customer Representative Date

AE-26156/10
7 Apr 98

SHEET 68 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 2

Quiet Power Bus Operational Power Test (Paragraph 3.3.3.1.1)

Required Quiet Bus Voltage QBV (Volts)	Measured QBV (Volts)	Maximum Peak Quiet Bus Current QBI (Amps)	Required Power (Watts)	Calculated Peak Power (QBV x QBI) (Watts)	Pass/Fail
26.~~95~~90 - 27.~~05~~1	27.07V	667.4mA	≤31	18.07W	PASS
28.~~95~~90 - 29.~~05~~1	28.03V	654 mA	≤31	18.33W	PASS
30.~~95~~90 - 31.~~05~~1	29.0V	645 mA	≤31	18.71W	PASS

Required Quiet Bus Voltage QBV (Volts)	Measured QBV (Volts)	Average Quiet Bus Current QBI (Amps)	Required Power (Watts)	Calculated Average Power (QBV x QBI) (Watts)	Pass/Fail
26.~~95~~90 - 27.~~05~~1	27.07V	634mA	≤25	17.16W	PASS
28.~~95~~90 - 29.~~05~~1	28.03V	618mA	≤25	17.32W	PASS
30.~~95~~90 - 31.~~05~~1	29.0V	612.8mA	≤25	17.77W	PASS

EOS/AMSU-A2 System P/N ~~1356006~~ Shop Order: 509734 S/N: 202

Circle Test: 1st CPT Final CPT Sub CPT ________

ENG 252 7-16-98

Test Systems Engineer Date

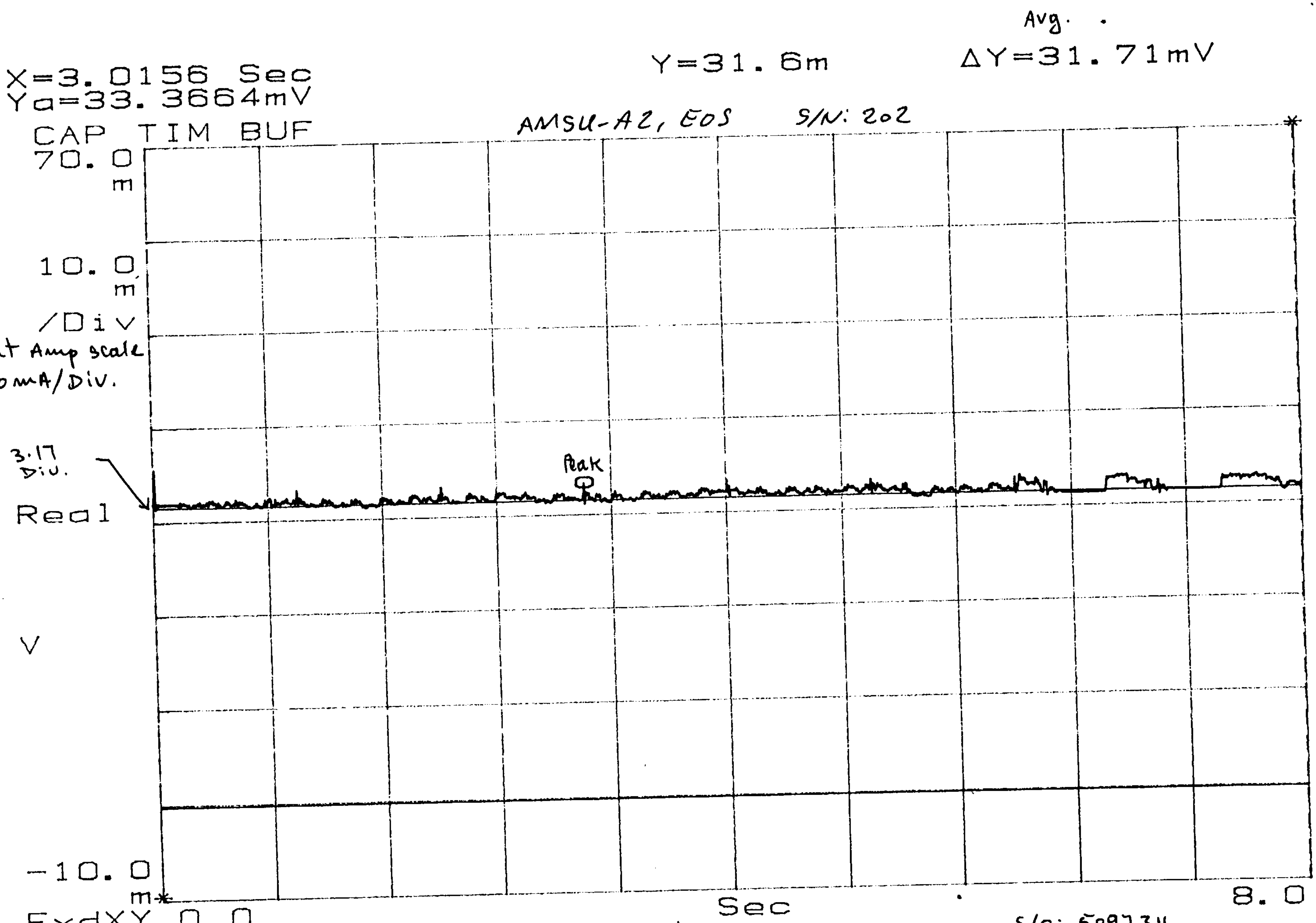
JUL 17 1998

197

Quality Control Date

2377 9/24/98

Customer Representative Date

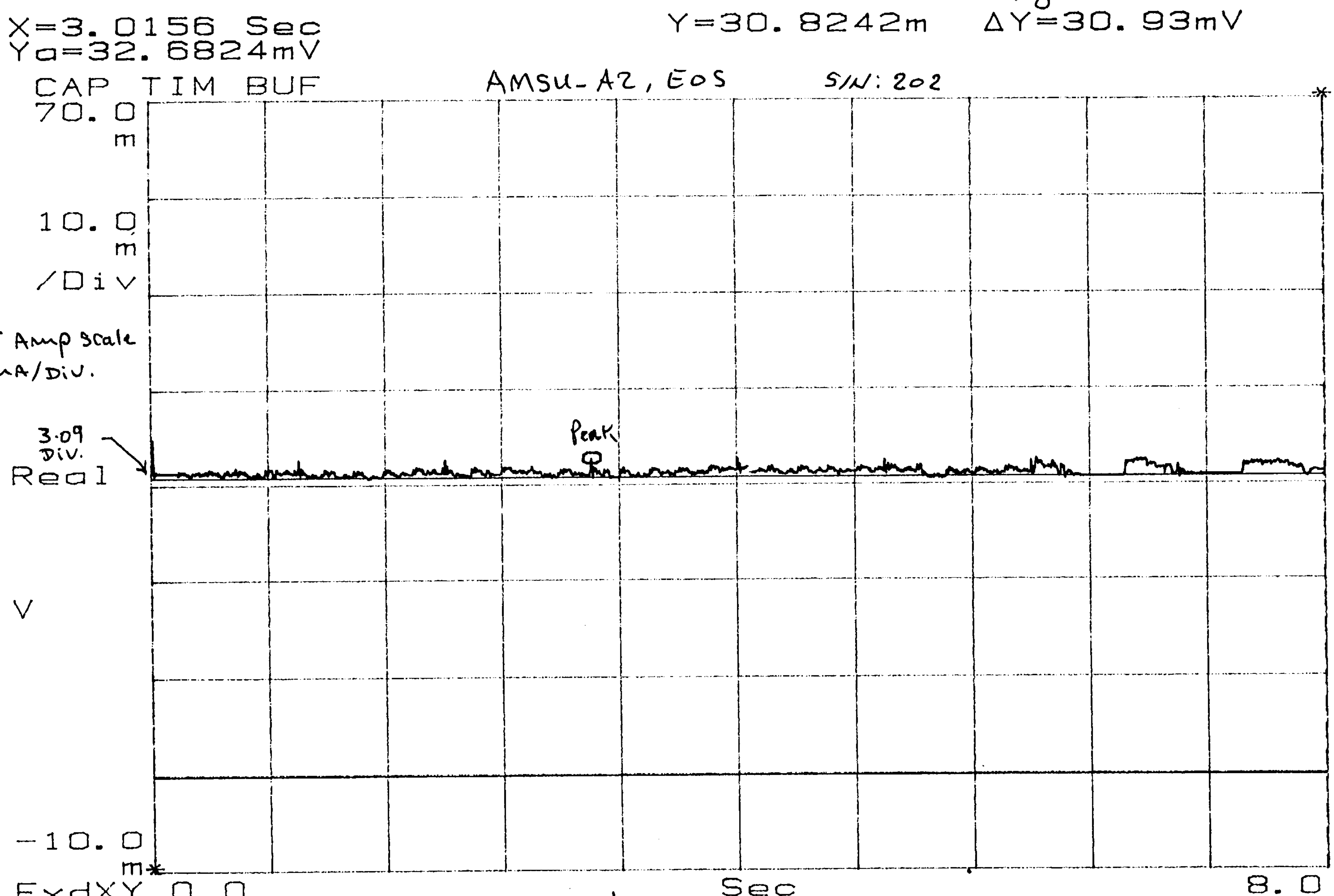


support TDS No. 2
POST T/V, final CPT

S/O: 509734
Q/Bus voltage: +27.0V

P/N: 135006-1-TST

Test Eng. ENG 252 DATE 7-16-98



Support TDS No. 2

POST T/V, Final CPT

P/N: 1356006-1-TST

S/O: 509734

Test Eng. ENG 252 DATE: 7-16-98

Q/Bus Voltage: +28.0V

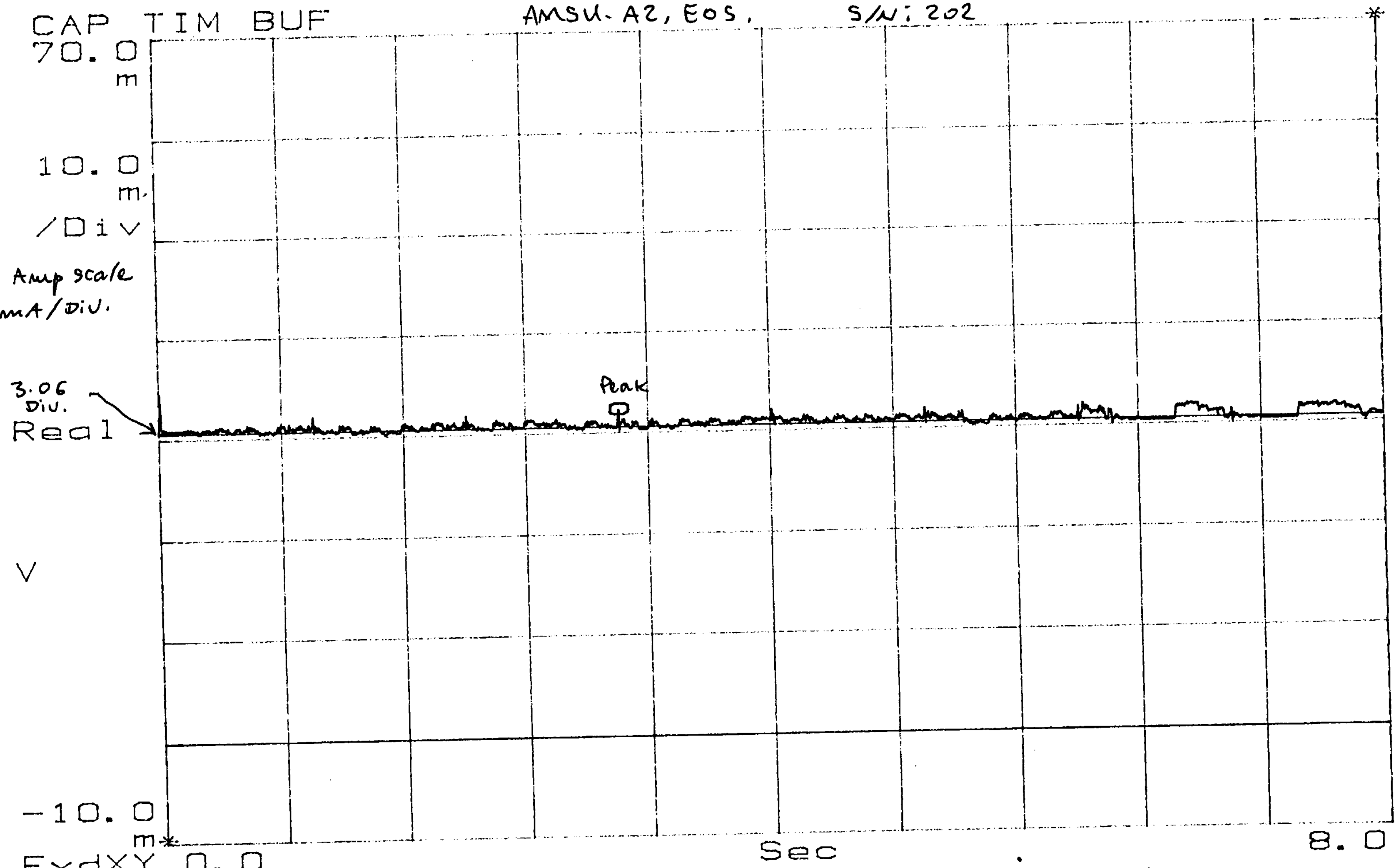
Quality Control QA 197 JUL 17 1998

X=3. 0156 Sec
Ya=32. 2455mV

Y=30. 5818m Avg. ΔY=30. 64mV

CAP TIM BUF

AMSU-A2, EOS, S/N: 202



Support TDS, No. 2
Post T/V, final CPT

S/O: 509734
Q/Bus Voltage: +29.0V

P/N: 1356006-1-TST

Test Eng. ENG 252 Date 7-16-98

Quality Control ~~JUL 17 1998~~

SHEET 70 OF
ECR NO. 1826

AE-26156/10
7 Apr 98

TEST DATA SHEET NO. 4
Quiet Power Bus Turn On Transient Test (Paragraph 3.3.3.1.3)

+31 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	~~4.88~~ 9.50 Amps	<8.3 Amps	~~P~~ F
Pulse Width	~~63.9~~ 64.7 ms	<150 ms	~~P~~ P *
Rate of Change(slope): dI/dT	793.52 ma/µs	<640 mA/µs	F

*TAR 3AB

+29 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	8.66 Amps	<8.3 Amps	F *
Pulse Width	64.79 ms	<150 ms	P
Rate of Change(slope): dI/dT	978.49 ma/µs	<640 mA/µs	F *

+27 Volts

Parameter	Measured/Calculated	Required	Pass/Fail
Peak Current	8.13 Amps	<8.3 Amps	P
Pulse Width	66.05 ms	<150 ms	P
Rate of Change(slope): dI/dT	894.27 ma/µs	<640 mA/µs	F *

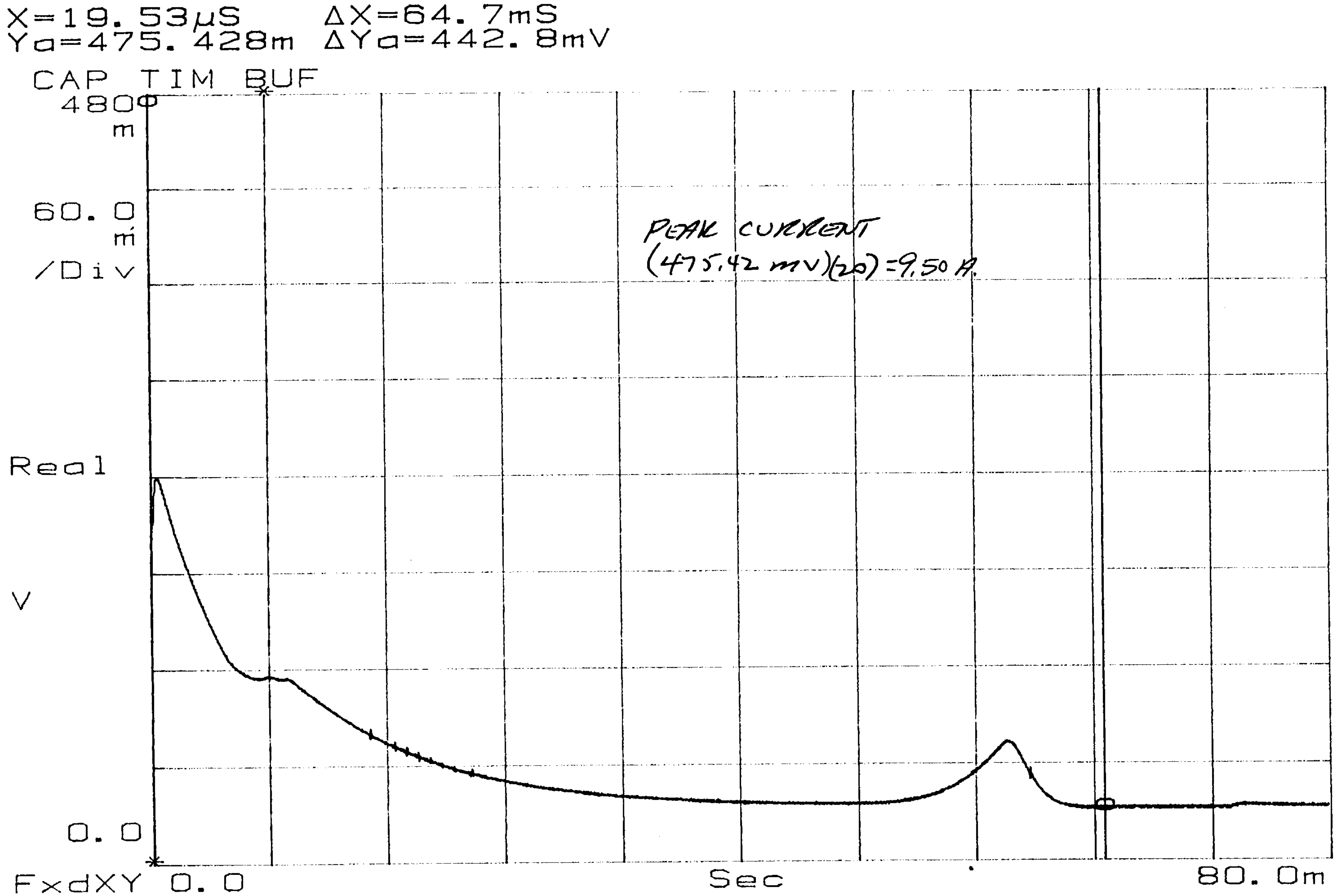
EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT

R. Hail 7/20/98
Test Systems Engineer Date

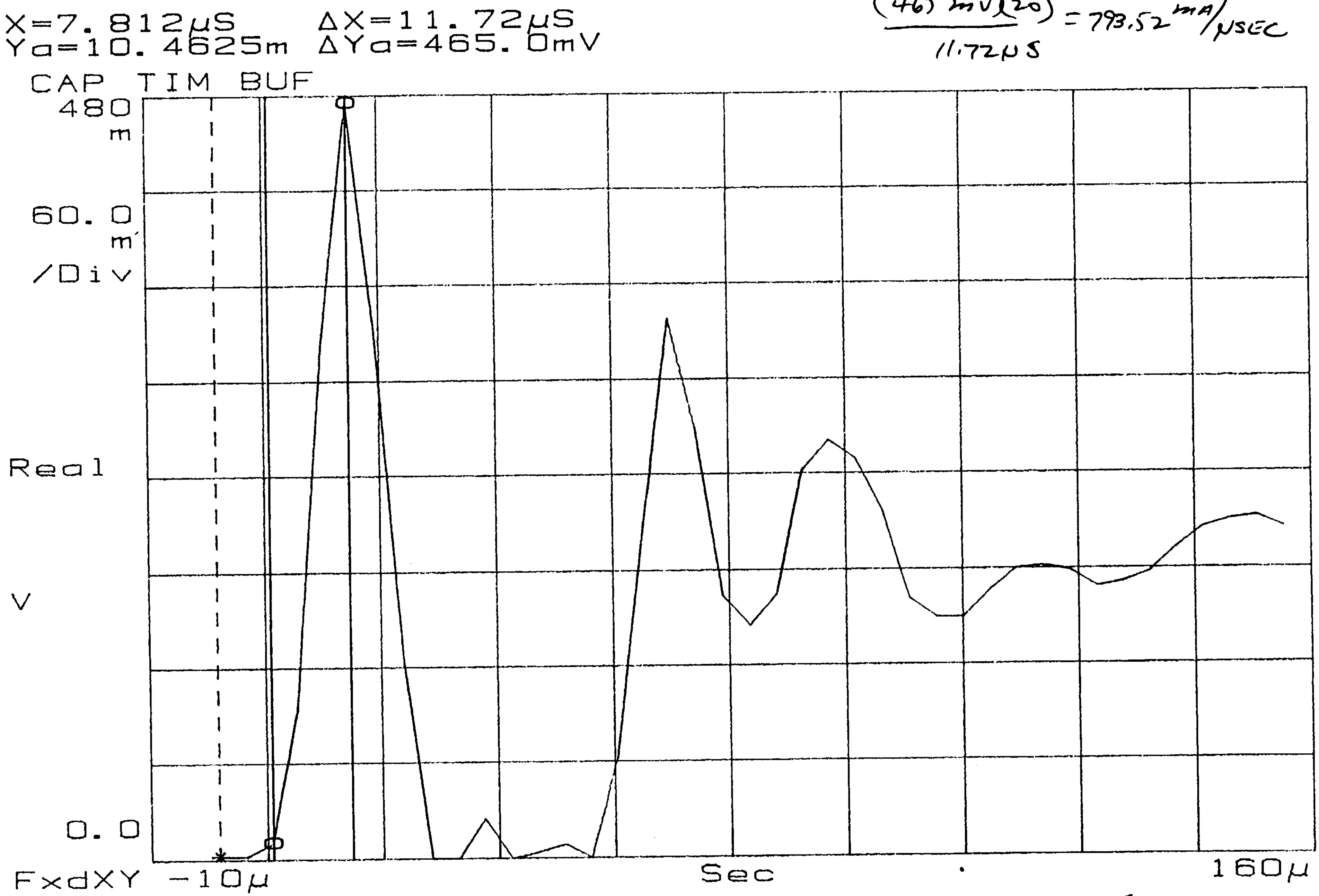
Quality Control Date

Customer Representative Date

P. 3.3.3.1.3



Q-BUSS 31.0V A2 EOS S/N 202 FINAL SCALE FACTOR 7/20/98



? 3.3.3.1.3

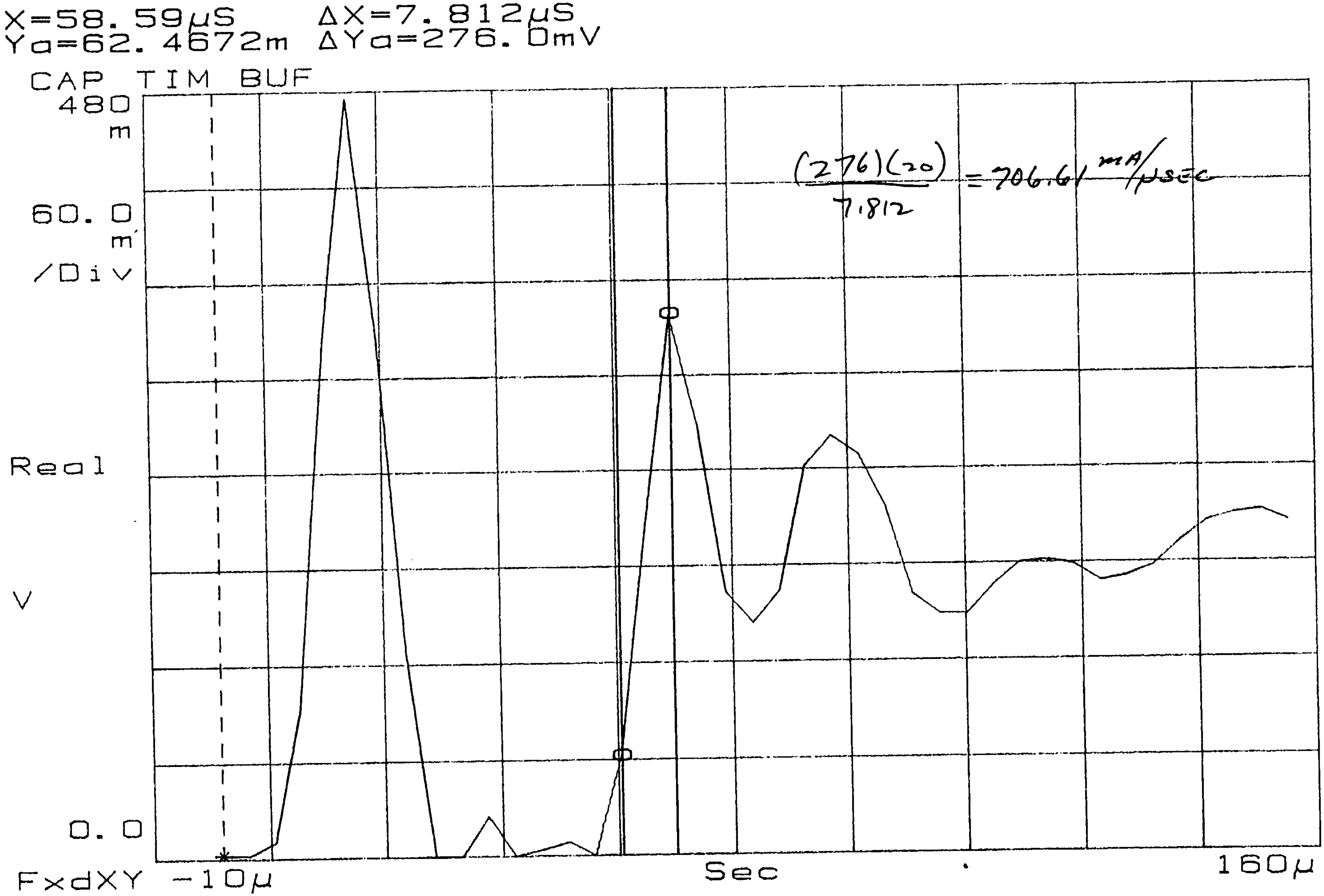
$\frac{(465\ mV)(20)}{11.72\ \mu S} = 793.52\ mA/\mu SEC$

Q BUSS
21V

EDS A2 S/N 202
FINAL CPT

SCALE FACTOR
10 mV = 200 ma
7/20/98

P3.3.3.1.3



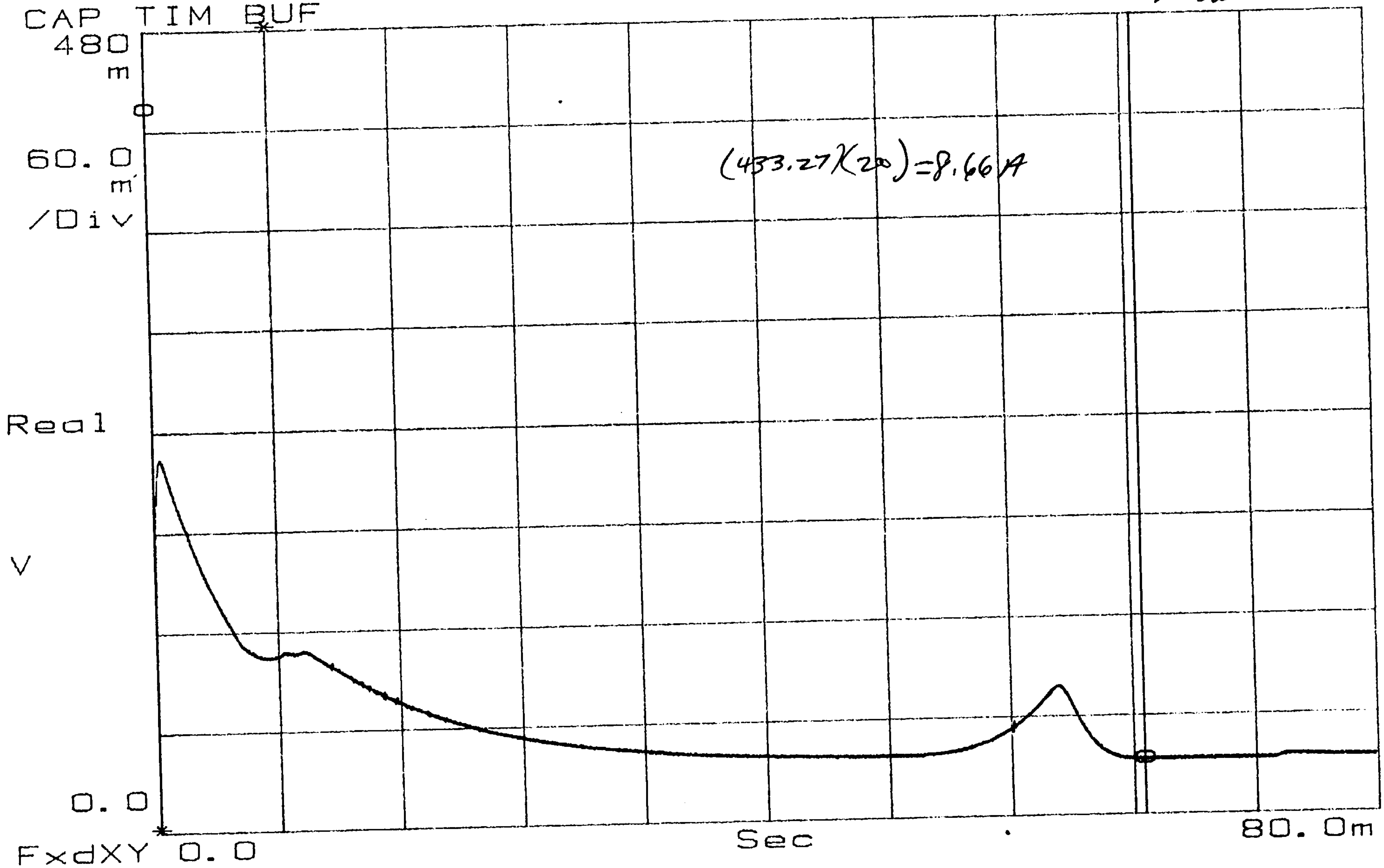
A2 EOS S/N202
FINAL CPT

SCALE FACTOR
10mV = 200 mA

P.3.3.3.1.3

7/20/98
R. [illegible]

X=15.62µS ΔX=64.79mS
Ya=433.27m ΔYa=399.7mV
CAP TIM BUF



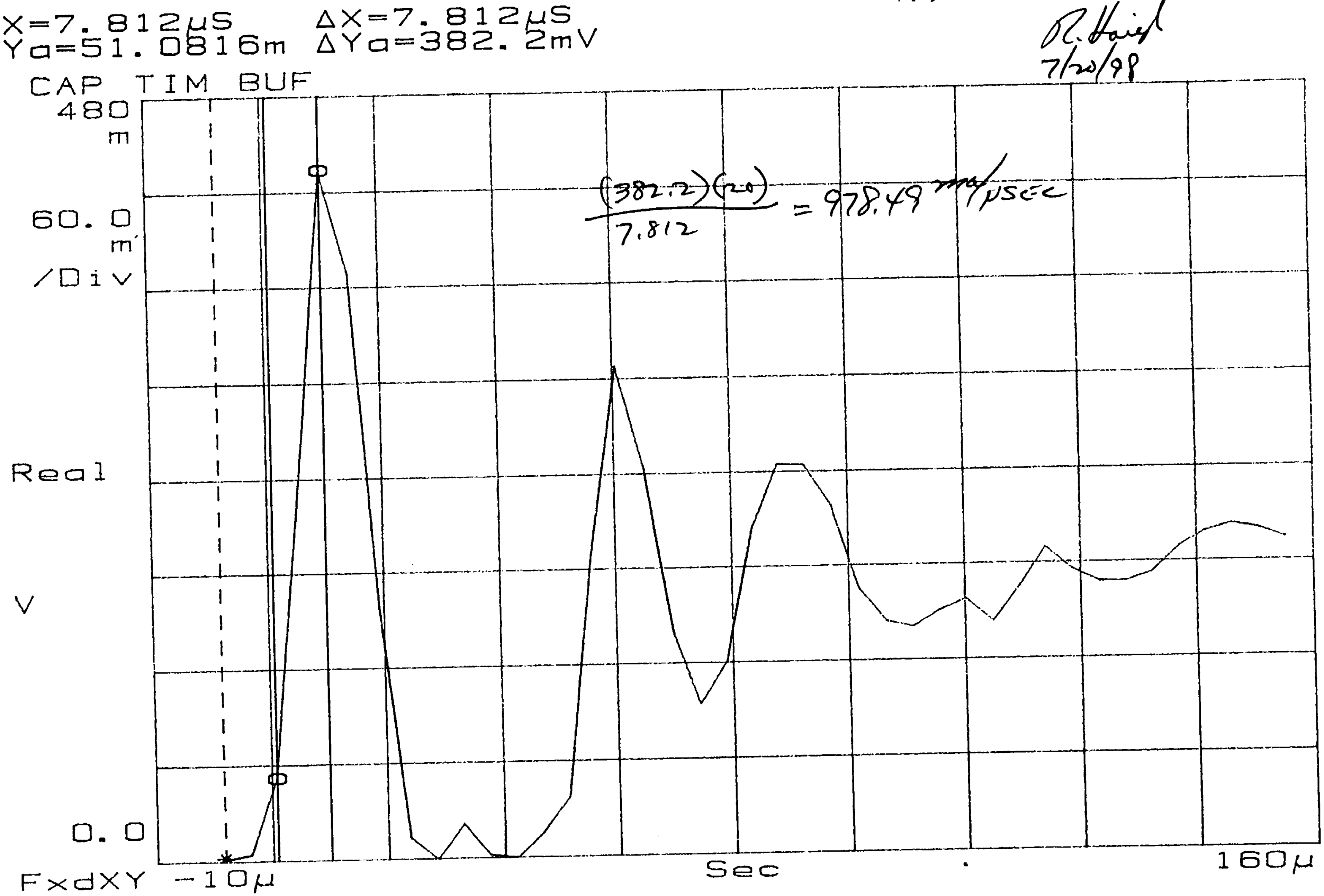
QBUSS 29V

EDS A2 S/N 202
FINAL CPT

SCALE FACTOR
10mV = 200ma

P.3.3.3.1.3

R. Haigh
7/20/98



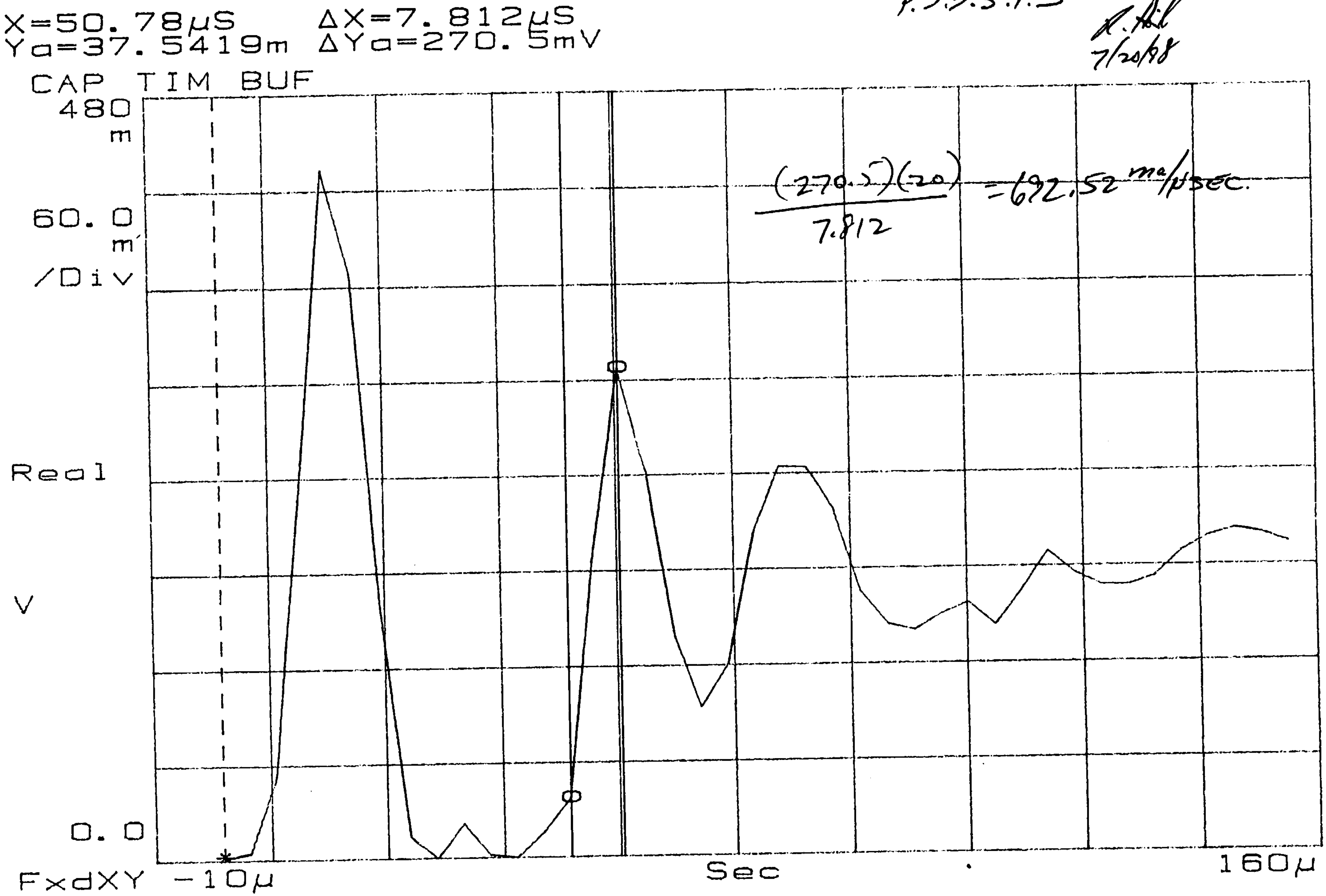
@ BUSS 29.0V

A2 EOS S/N 202
FINAL CKT

SCALE FACTOR
10mV = 200ma

P.3.3.3.1.3

R. Ail
7/20/98

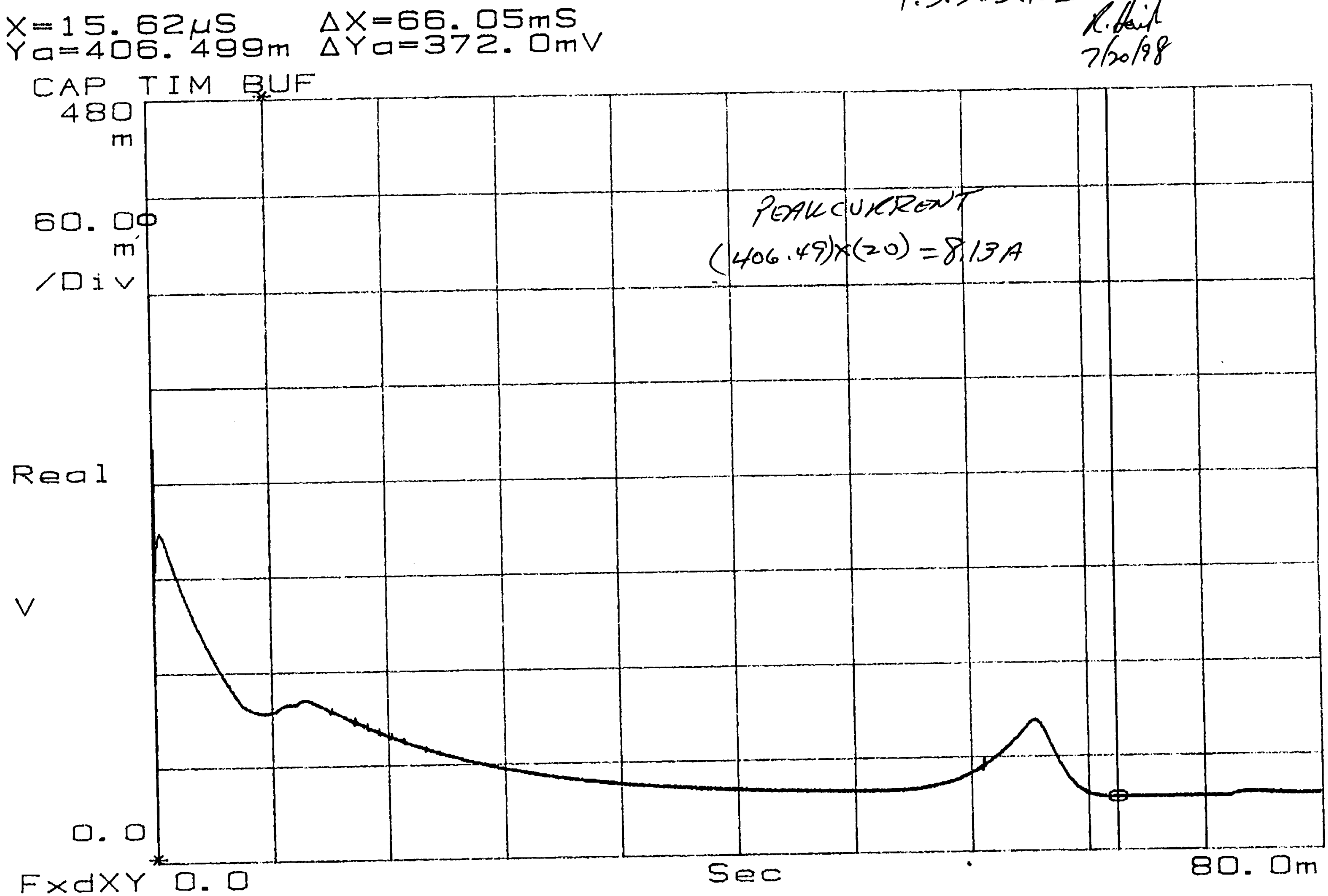


A2 LDS S/N 202
FINAL CPT

SCALE FACTOR

P.3.3.3.1.3

R. Heil
7/20/98



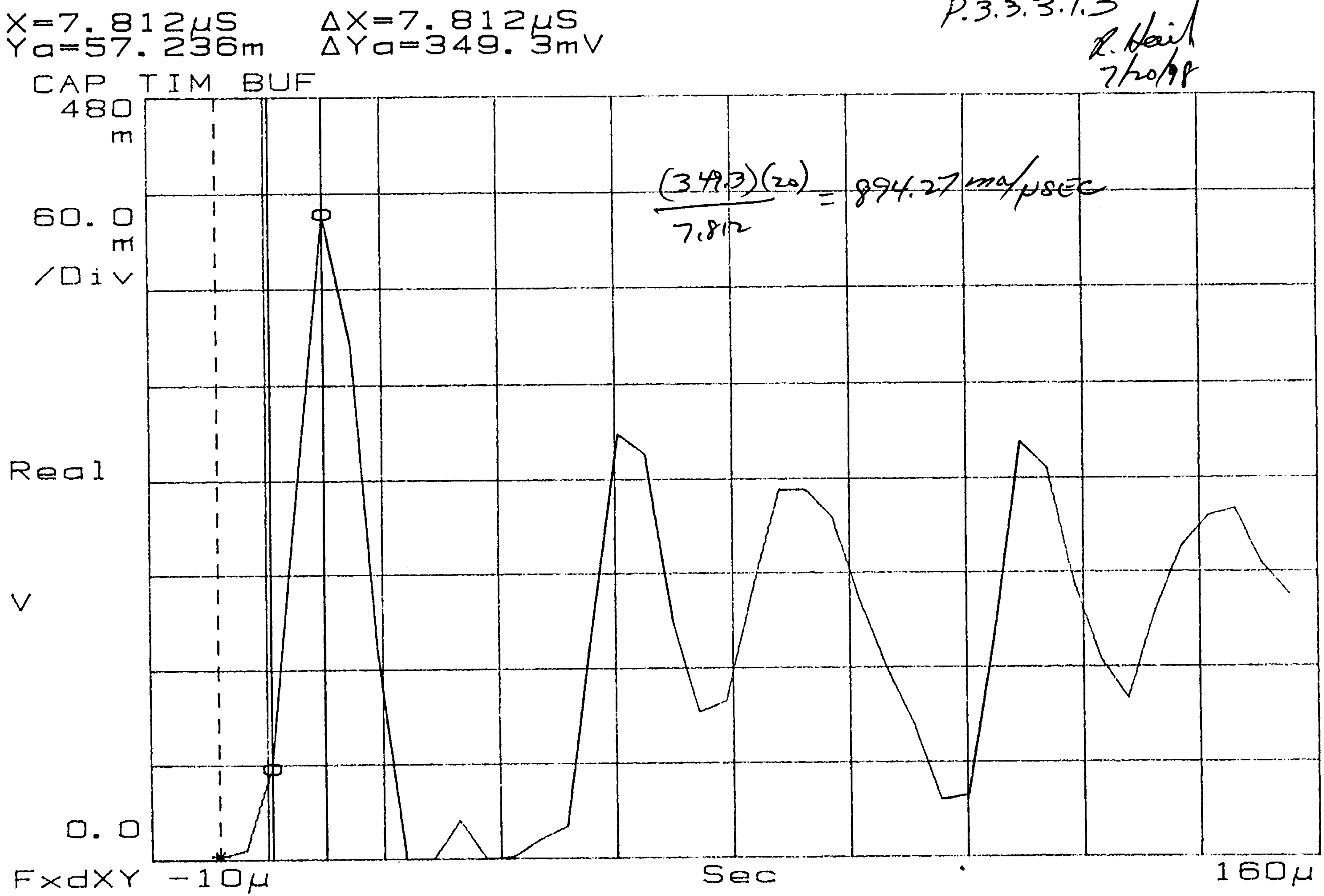
Q BUSS 27V

A2 EOS S/N 202
FINAL CPT

SCALE FACTOR
10 mV = 200 ma.

P.3.3.3.1.3

R. Heil
7/20/98

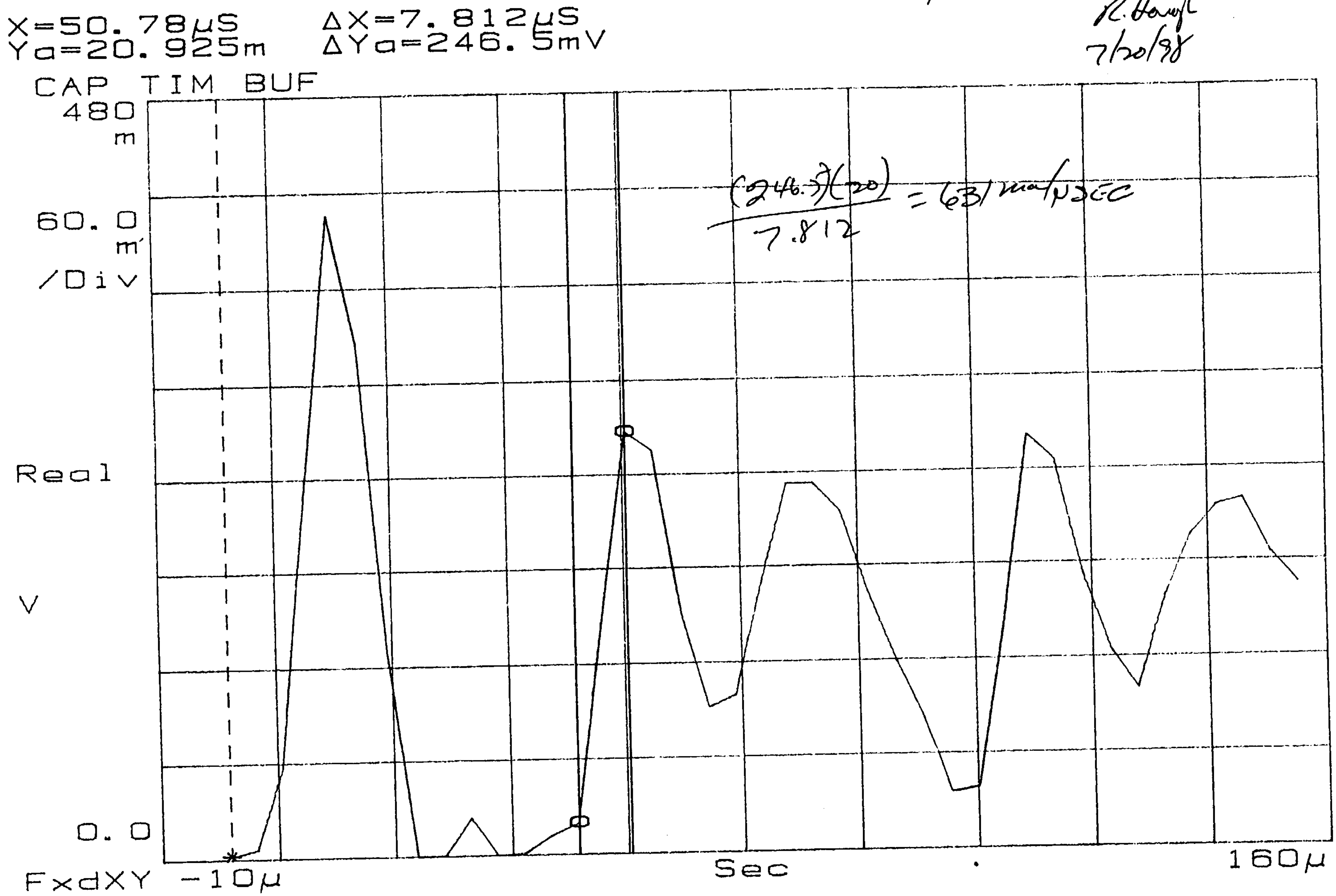


$$\frac{(349.3)(20)}{7.812} = 894.27 \text{ ma}/\mu\text{SEC}$$

Q. BUSS 27V A2 EOS S/N 202
FINAL CPT

SCALE FACTOR

P.3.3.3.1.3
R. Haigh
7/20/98



Q BUSS 27V A2 EOS S/N 202

SCALE FACTOR

6-5-98

ENG 252

QC 223

TEST DATA SHEET NO. 5
Noisy Power Bus Operational Power Test (Paragraph 3.3.3.2.1)

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Required Peak Current (Amps)	Maximum Peak Noisy Bus Current NBI (Amps)	Required Peak Power (Watts)	Calculated Peak Power (NBV x NBI) (Watts)	Pass/Fail
26.9~~5~~0 27.~~05~~1	27.01V	≤1.2	1.07 A	≤40	28.90W	P
28.9~~5~~0 29.~~05~~1	29.02	≤1.2	1.04 A	≤40	30.18W	P
30.9~~5~~0 31.~~05~~1	31.0V	≤1.2	.996 A	≤40	30.88W	P

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Average Noisy Bus Current NBI (Amps)	Required Average Power (Watts)	Calculated Average Power (NBV x NBI) (Watts)	Pass/Fail
26.9~~5~~0 - 27.~~05~~1	27.01V	.103 A	≤6	2.78W	P
28.9~~5~~0 - 29.~~05~~1	29.02V	.112 A	≤6	3.25W	P
30.9~~5~~0 - 31.~~05~~1	31.0V	.125 A	≤6	3.88 W	P

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________

R. Haig 7/20/98
Test Systems Engineer Date

2377 9/24/98
Customer Representative Date

QA 197 7/20/98
Quality Control Date

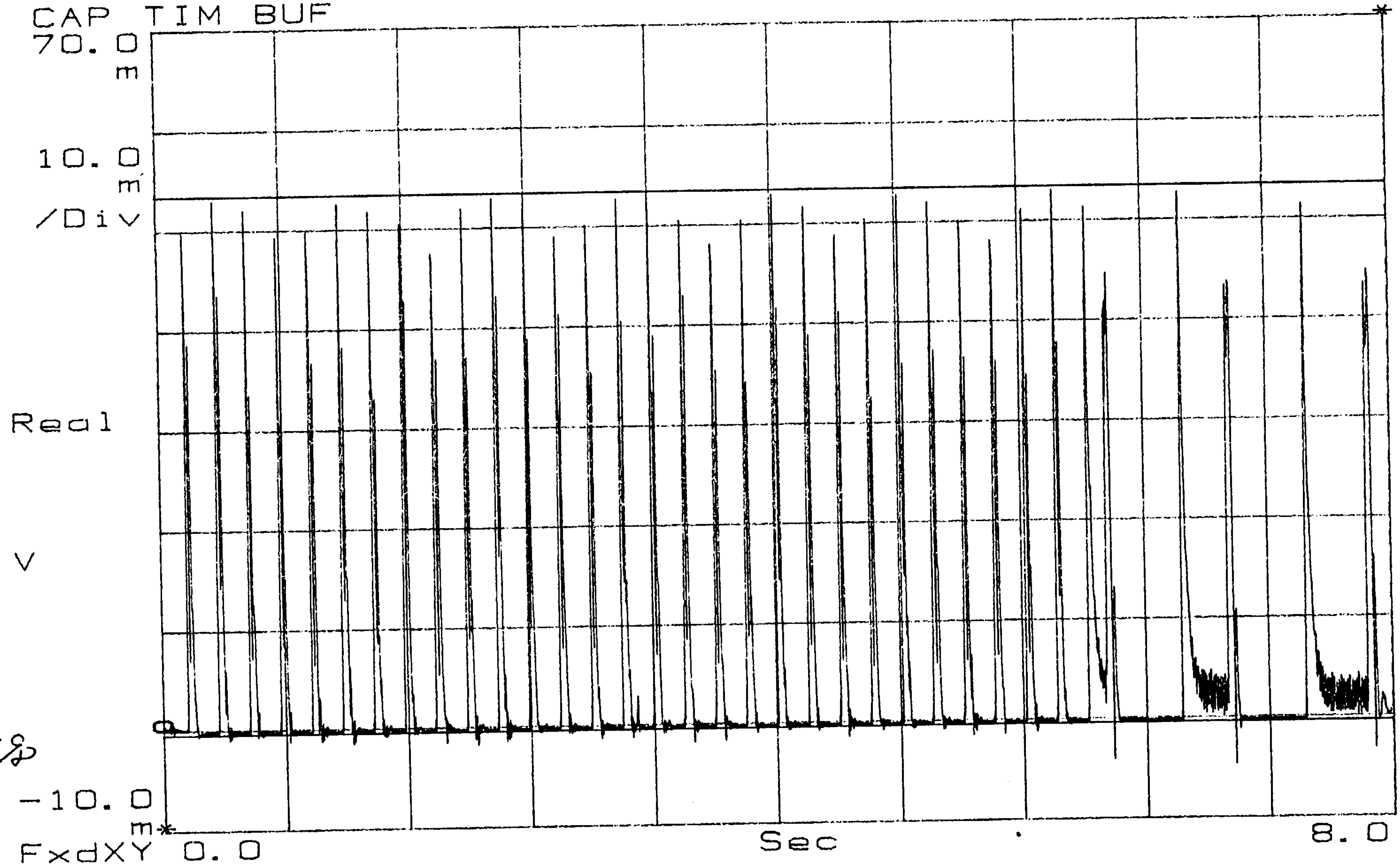
7.3.3.3.2.1

R. Hair 7/20/98

Y=-448.49μ ΔY=53.87mV

X=0.0 Sec
Ya=549.233μV

CAP TIM BUF



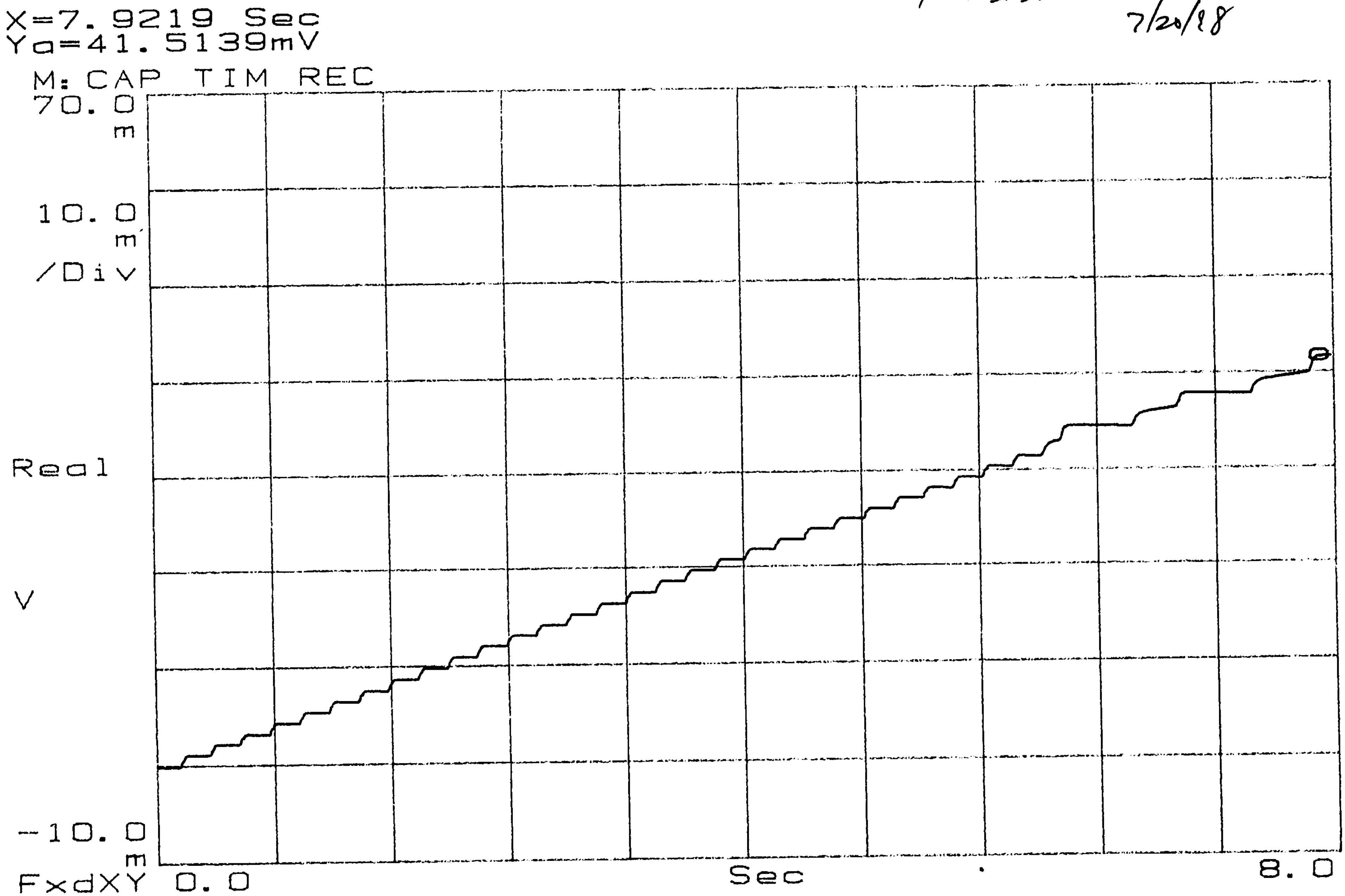
7-20-98 (QA 197)

N-BUSS 27V

A2 EDS S/N 202
FINAL CPT

SCALE FACTOR
10mV = 200ma

P. 3.3.3.2.1 R. Haird
7/20/98

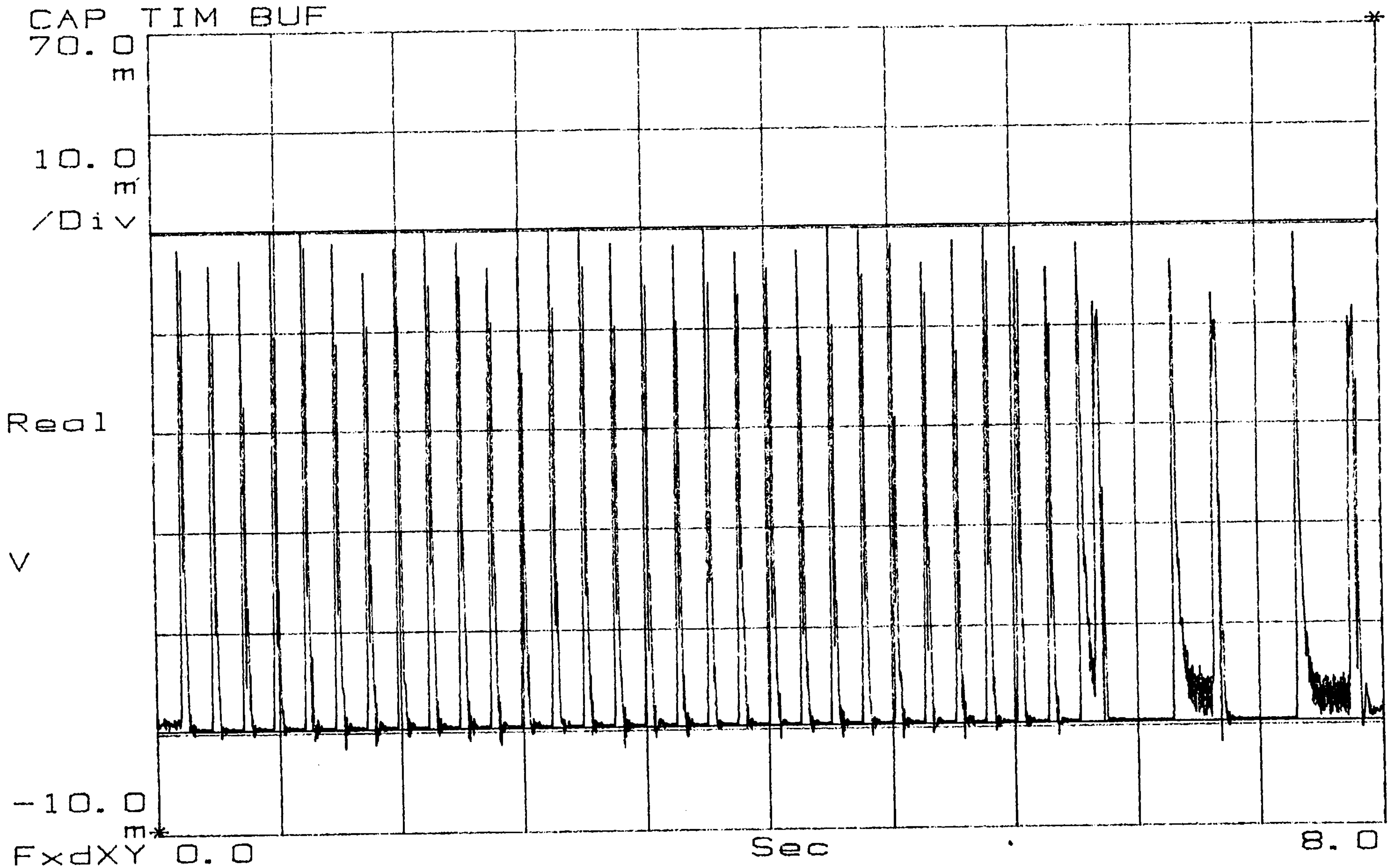


N BUSS 27V A2 EDS S/N 202
FINAL CPT

SCALE FACTOR

3.3.3.2.1 / R. Hoy 7/20/98

Y=375.757μ ΔY=49.84mV

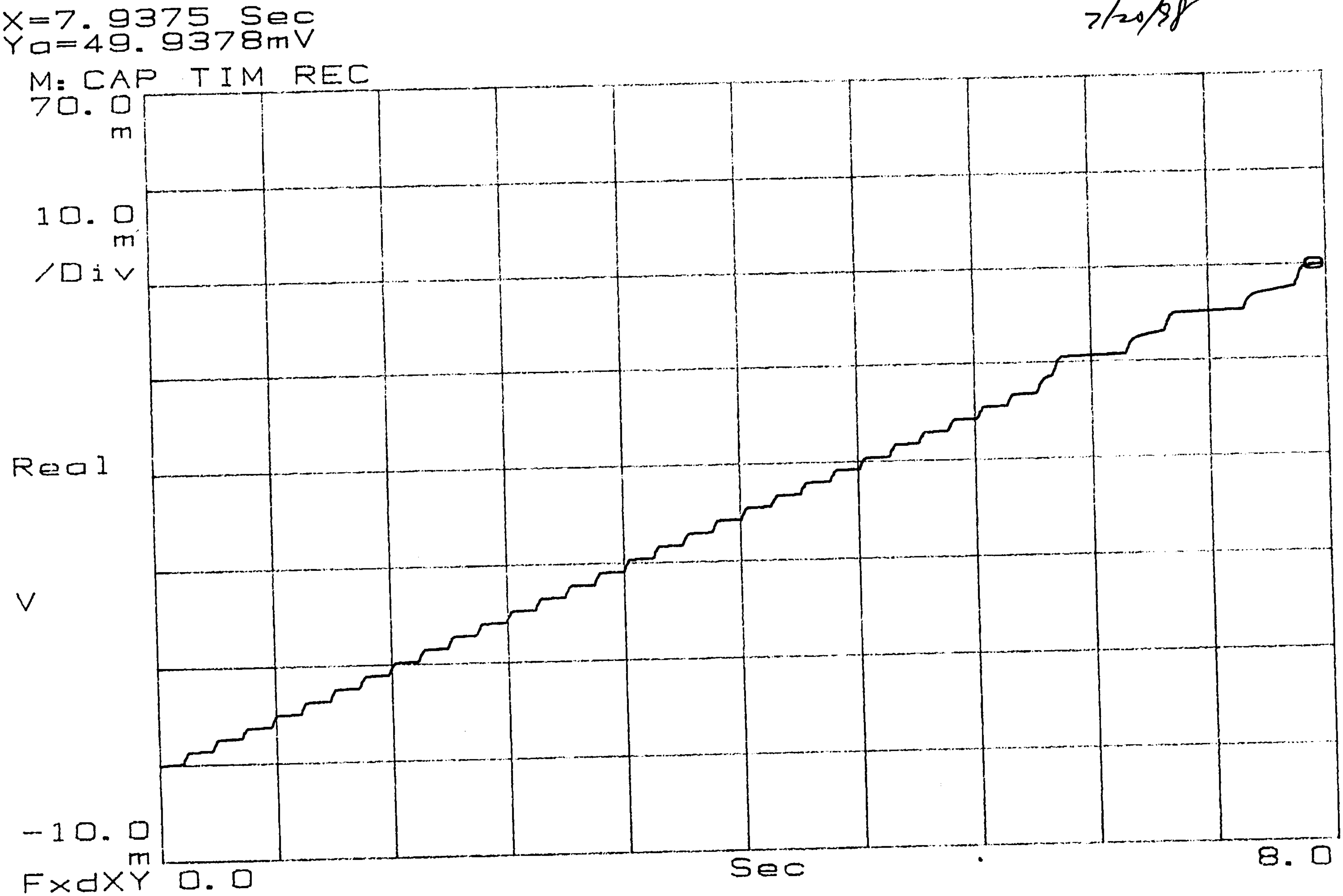


N BUSS 31V A2 EDS S/N 202 FINAL CPT

SCALE FACTOR
10mV = 200 ma

7-20-98

P.3.3.3.2.1 R. Haisl 7/20/98



N BUSS 31V

A2 EDS S/N 202

SCALE FACTOR
10 mV = 200 ma

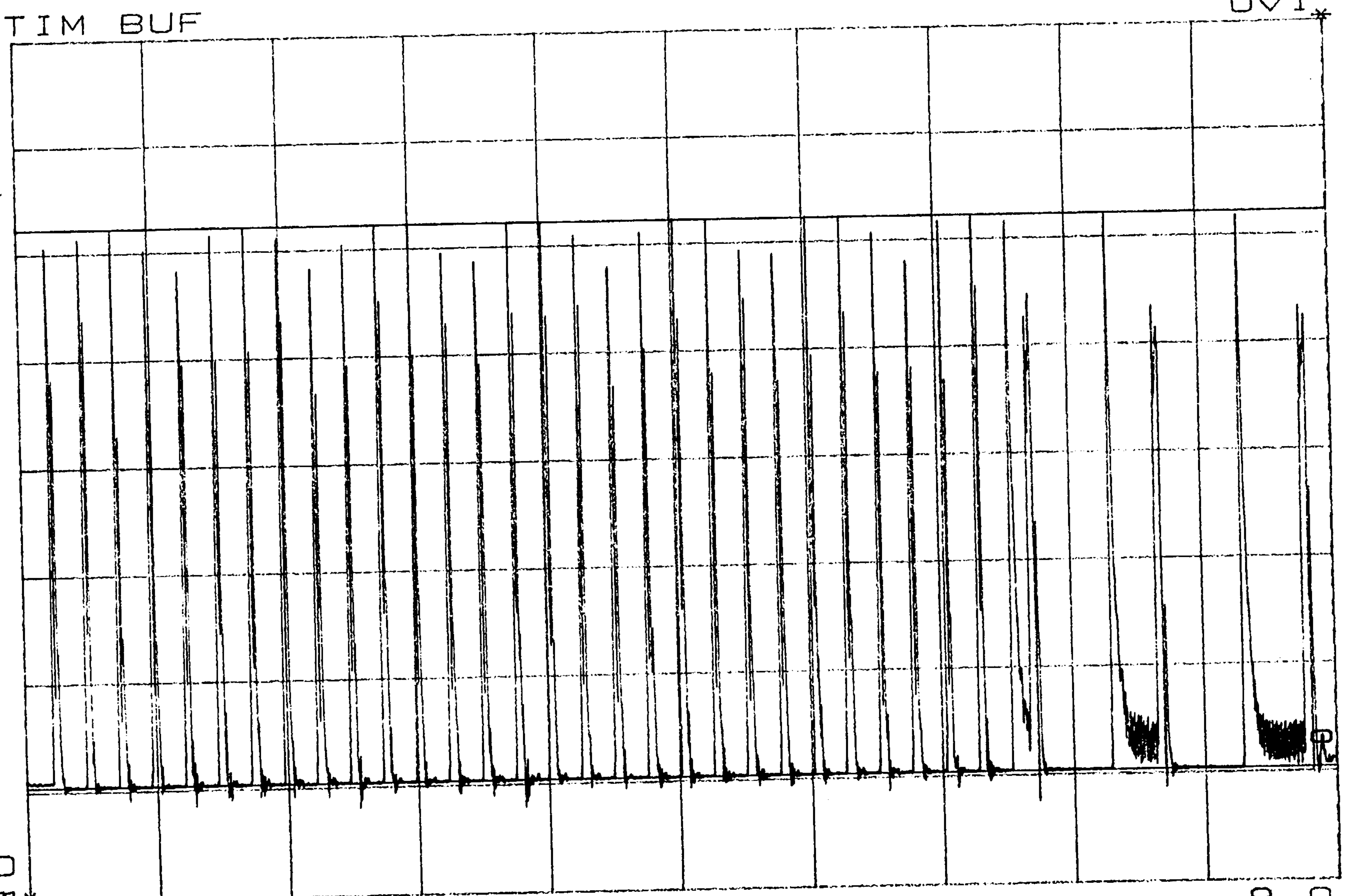
7A 197

P.3.3.3.2.1

R. Haigh 7/20/98

Y=52. 303m ΔY=51. 88mV

X=7. 9258 Sec
Ya=3. 01772mV



7A 197 7-20-98

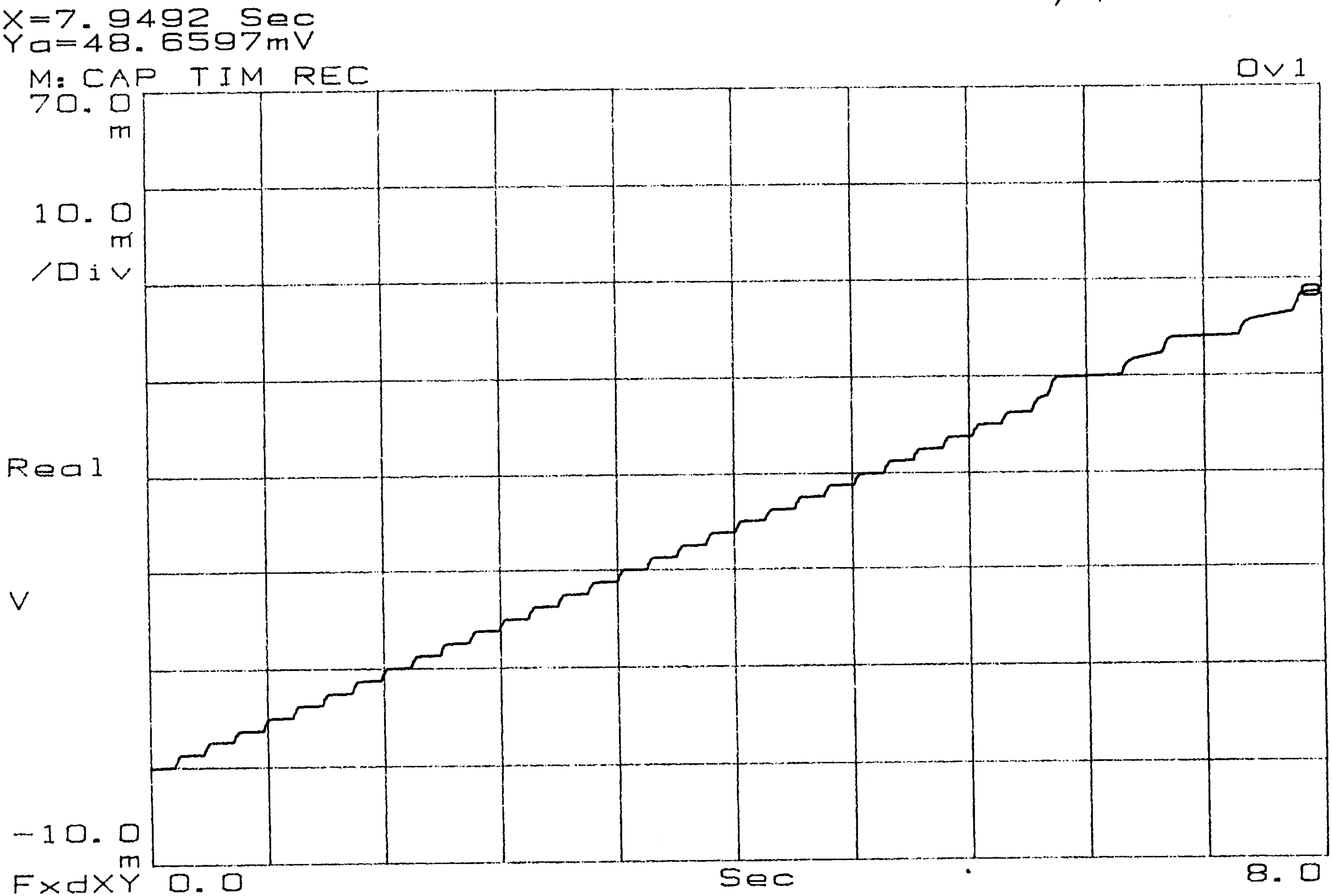
N BUSS 29V

A2 EDS S/N 202
FINAL CPT

SCALE FACTOR
10mV = 200ma

3.3.3.2.1

R. Heil
7/20/98



N BUSS 29V

A2 EDS S/N 202
FINAL CPT

SCALE FACTOR
10mV = 200ma

7-20 TA 197

TEST DATA SHEET NO. 5
Noisy Power Bus Operational Power Test (Paragraph 3.3.3.2.1)

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Required Peak Current (Amps)	Maximum Peak Noisy Bus Current NBI (Amps)	Required Peak Power (Watts)	Calculated Peak Power (NBV x NBI) (Watts)	Pass/Fail
26.90 - 27.10		≤1.2		≤40		
28.90 - 29.10		≤1.2		≤40		
30.90 - 31.10		≤1.2		≤40		

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Average Noisy Bus Current NBI (Amps)	Required Average Power (Watts)	Calculated Average Power (NBV x NBI) (Watts)	Pass/Fail
26.90 - 27.10			≤6		
28.90 - 29.10			≤6		
30.90 - 31.10			≤6		

completed on 7/20/98

Required Noisy Bus Voltage NBV (Volts)	Measured NBV (Volts)	Bus Current During the I/H, D. Period	Pass/Fail
26.95 — 27.05	27.01	10 ma * 60 ma **	Not Applicable
28.95 — 29.05	29.02	10 ma * 60 ma **	Not Applicable
30.95 — 31.05	31.0	10 ma * 65 ma **	Not Applicable

* between beams
** between cal tests

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ______

[signature] 8-5-98
Test Systems Engineer Date

[signature] 7A 269 08/05/98
Quality Control Date

9/24/98
Customer Representative Date

SHEET 72 OF ____
ECP NO. 1826

TEST DATA SHEET NO. 6
Noisy Power Bus Turn On Transient Test (Paragraph 3.3.3.2.2)

+31 Volts

Parameter	Measured/Calculated		Required	Pass/Fail
Peak Current	14.74	Amps	<9.6 Amps	F
Pulse Width	130	ms	<100 ms	F
Rate of Change(slope): dI/dT	1610	ma/µs	<846 mA/µs	F

* TAR 3193

+29 Volts

Parameter	Measured/Calculated		Required	Pass/Fail
Peak Current	13.38	Amps	<9.6 Amps	F
Pulse Width	132	ms	<100 ms	F
Rate of Change(slope): dI/dT	1365.34	ma/µs	<846 mA/µs	F

*

+27 Volts

Parameter	Measured/Calculated		Required	Pass/Fail
Peak Current	12.92	Amps	<9.6 Amps	F
Pulse Width	125	ms	<100 ms	F
Rate of Change(slope): dI/dT	1351	ma/µs	<846 mA/µs	F

*

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT

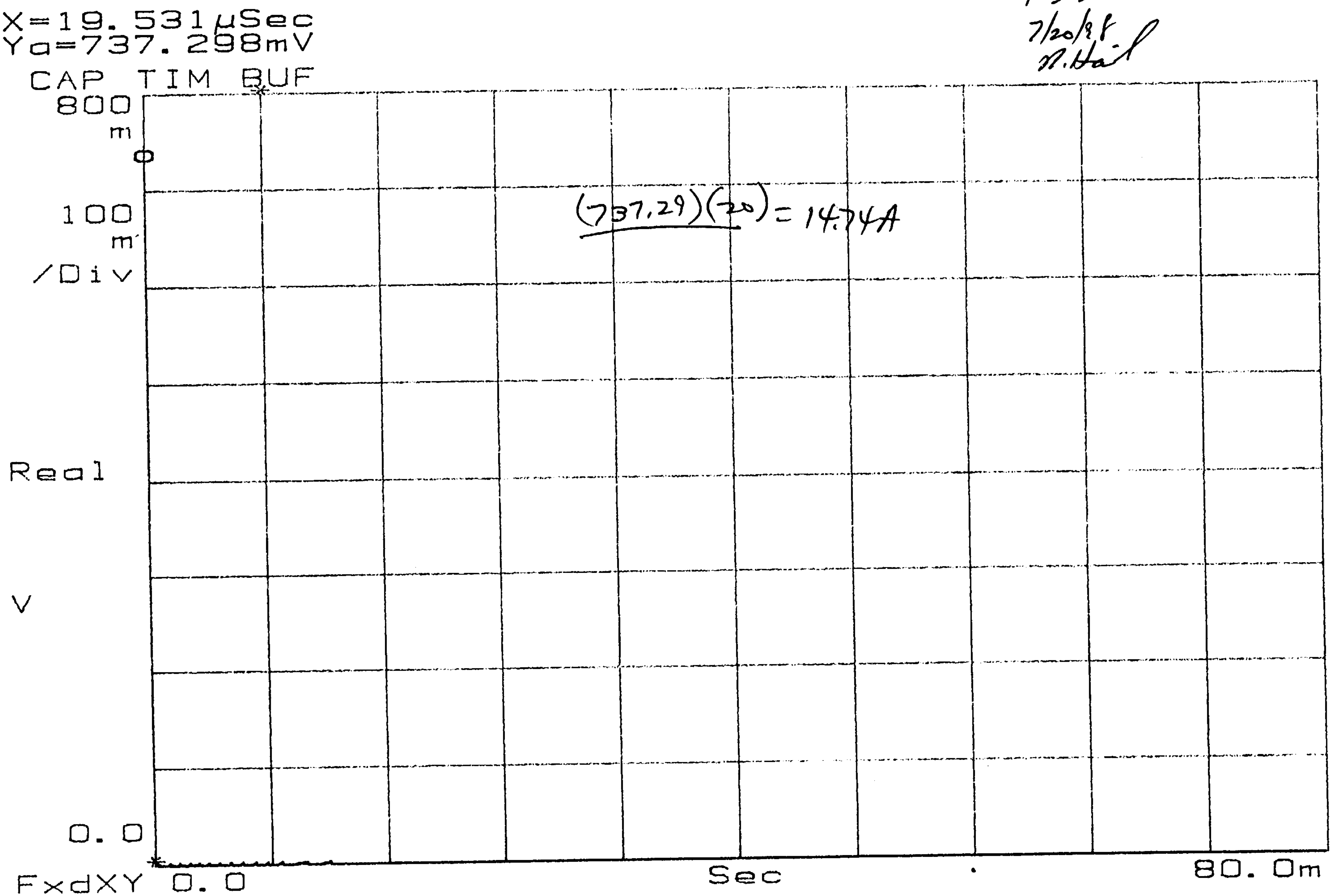
void 9/24/98 2377

Customer Representative Date

R. Hail 7/20/98
Test Systems Engineer Date

Quality Control Date

P.3.3.3.22
7/20/98
N. Hail

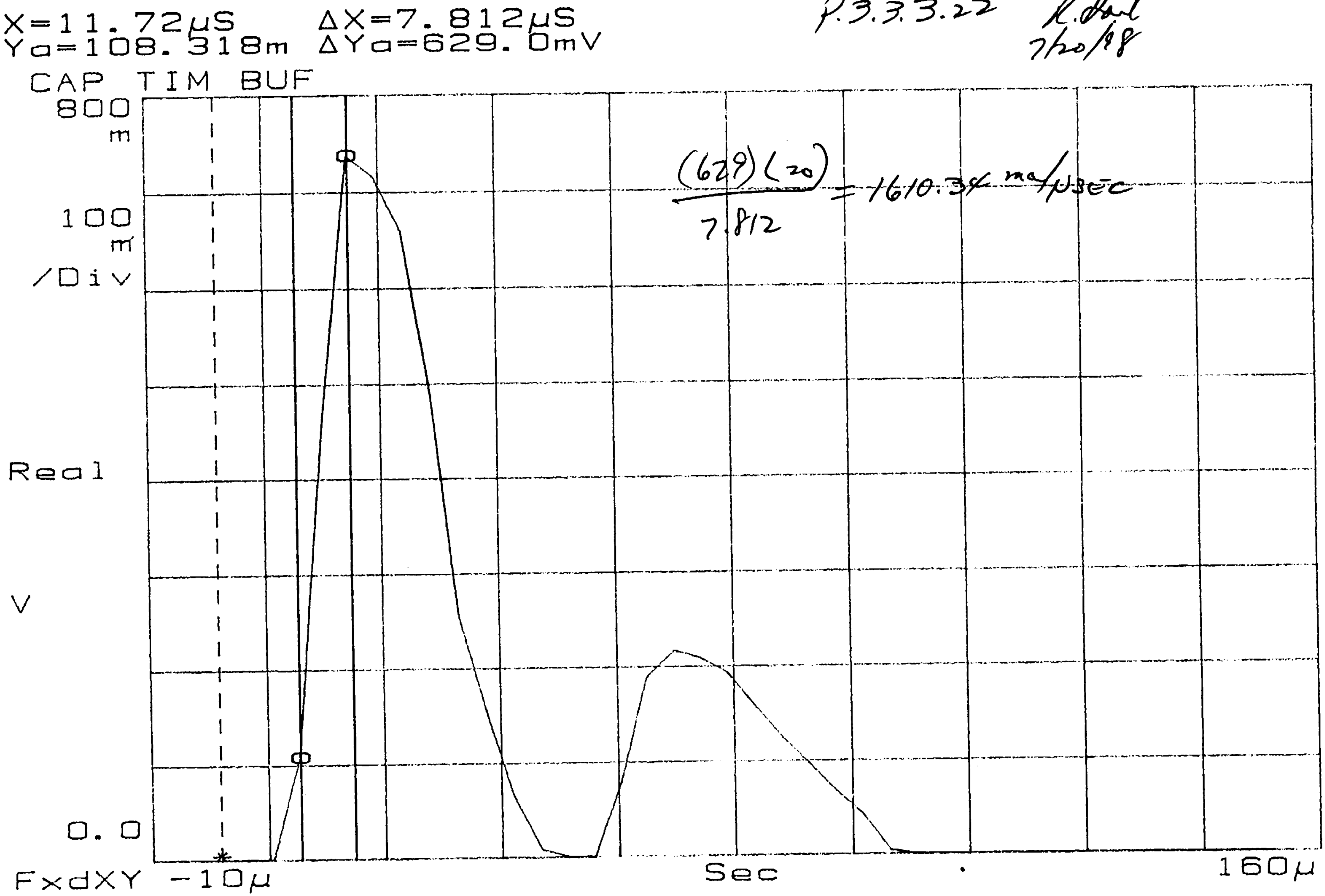


N BUSS
31V

A2 EDS S/N 202
FINAL CPT

SCALE FACTOR

P.3.3.3.22 R. Hail 7/20/98

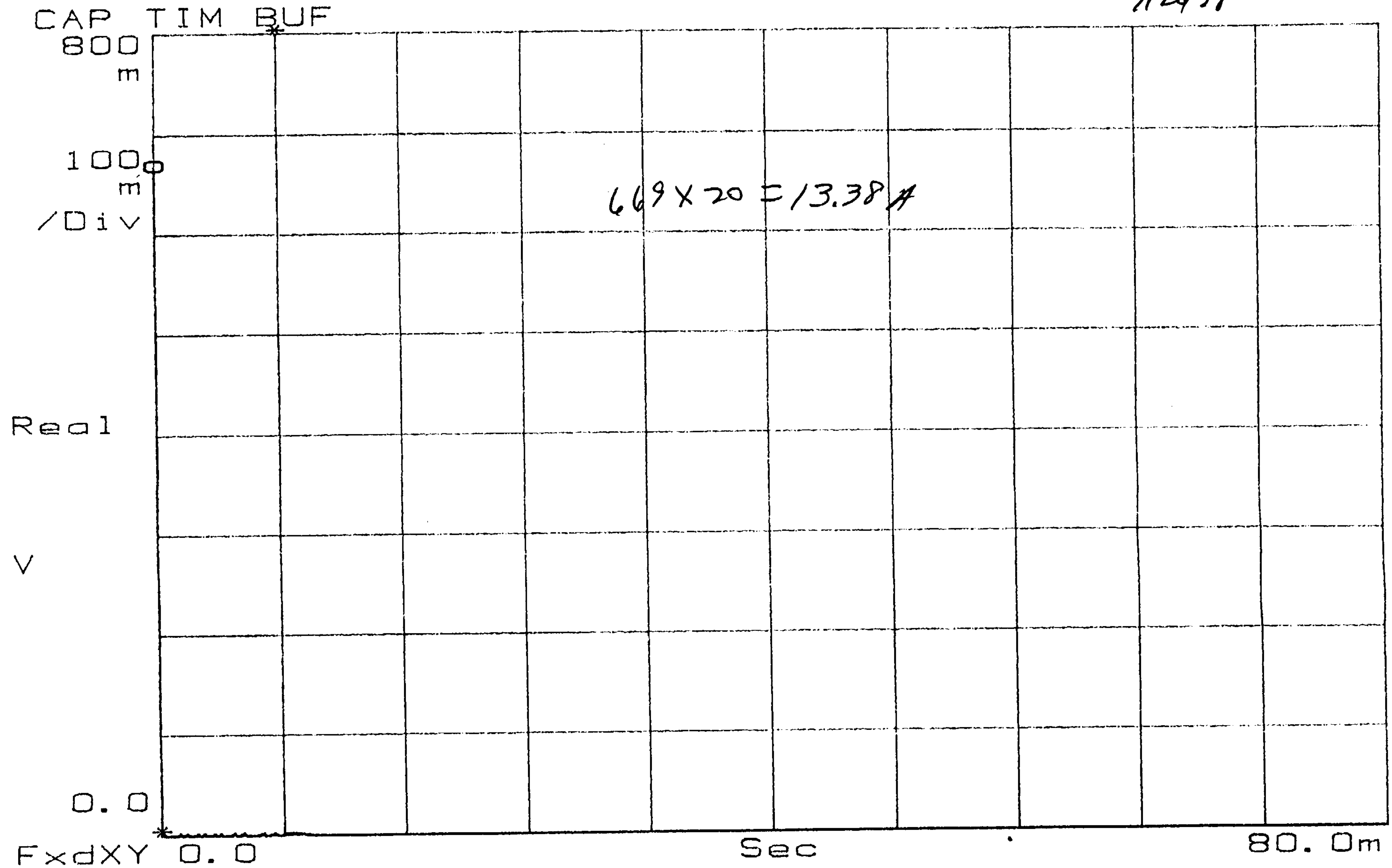


N BUSS 31V A2 EDS S/N 202
FINAL CPT

SCALE FACTOR
10 mV = 200 ma

P.3.3.3.2.2 R. Haigh 7/20/98

X=23.437µSec
Ya=669.907mV

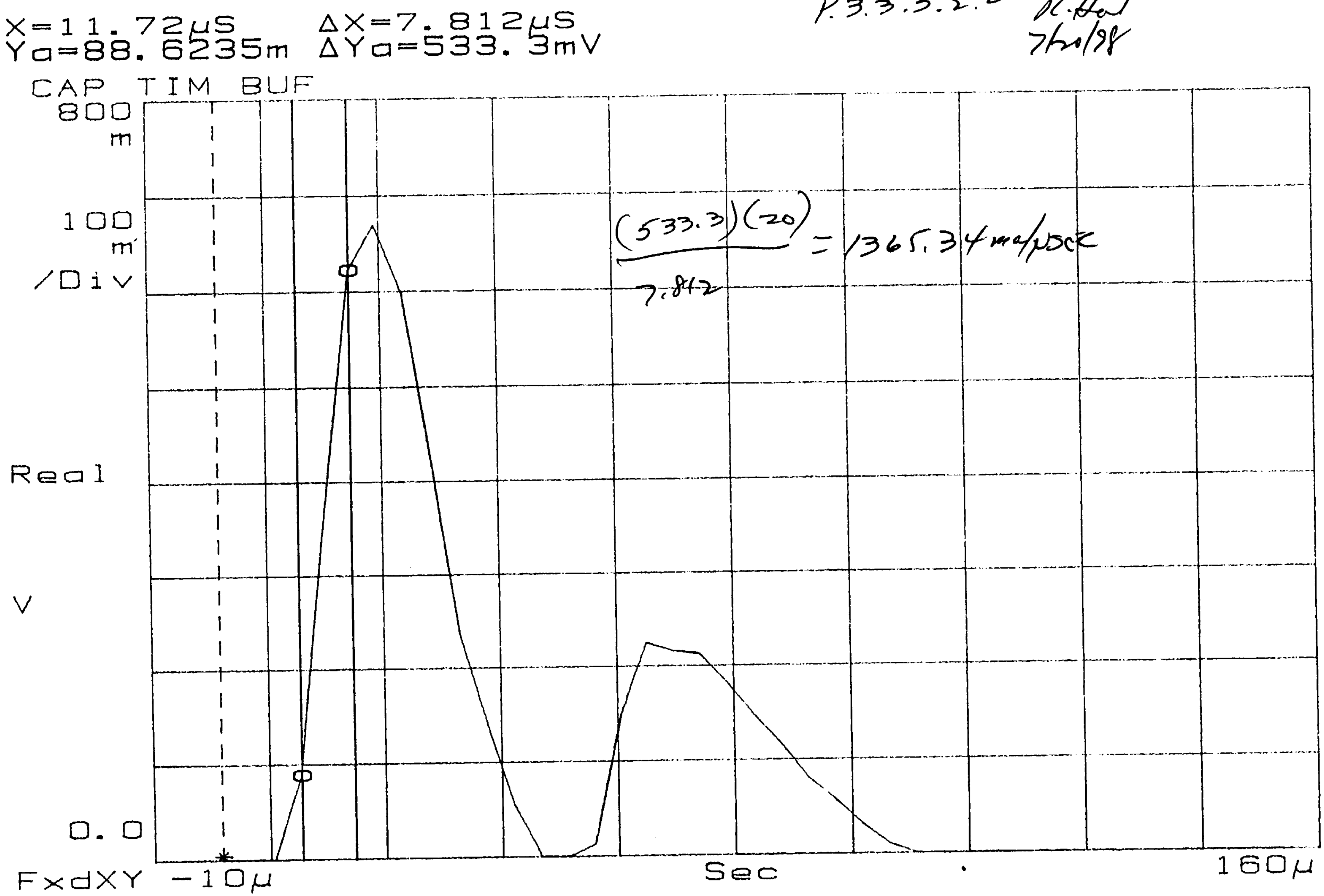


29V

A2 EOS S/N 202
FINAL CPT

SCALE FACTOR
10mV = 200 ma

P.3.3.3.2.2 R. Hail 7/20/98



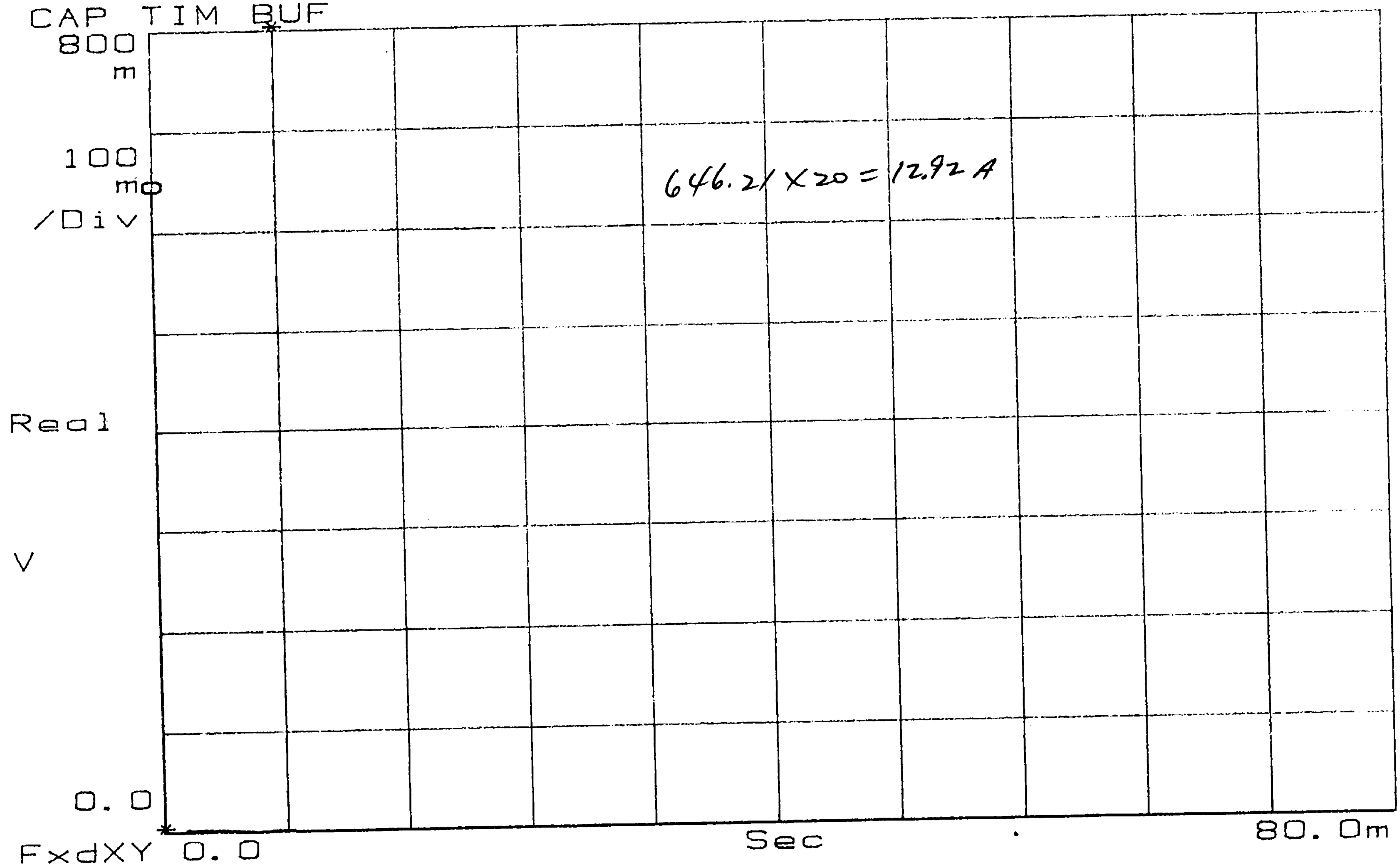
N BUSS 29V

A2 EDS S/N 202 FINAL CPT

SCALE FACTOR 10mV = 200ma

P.3.3.3.2.2 R. Haid 7/20/98

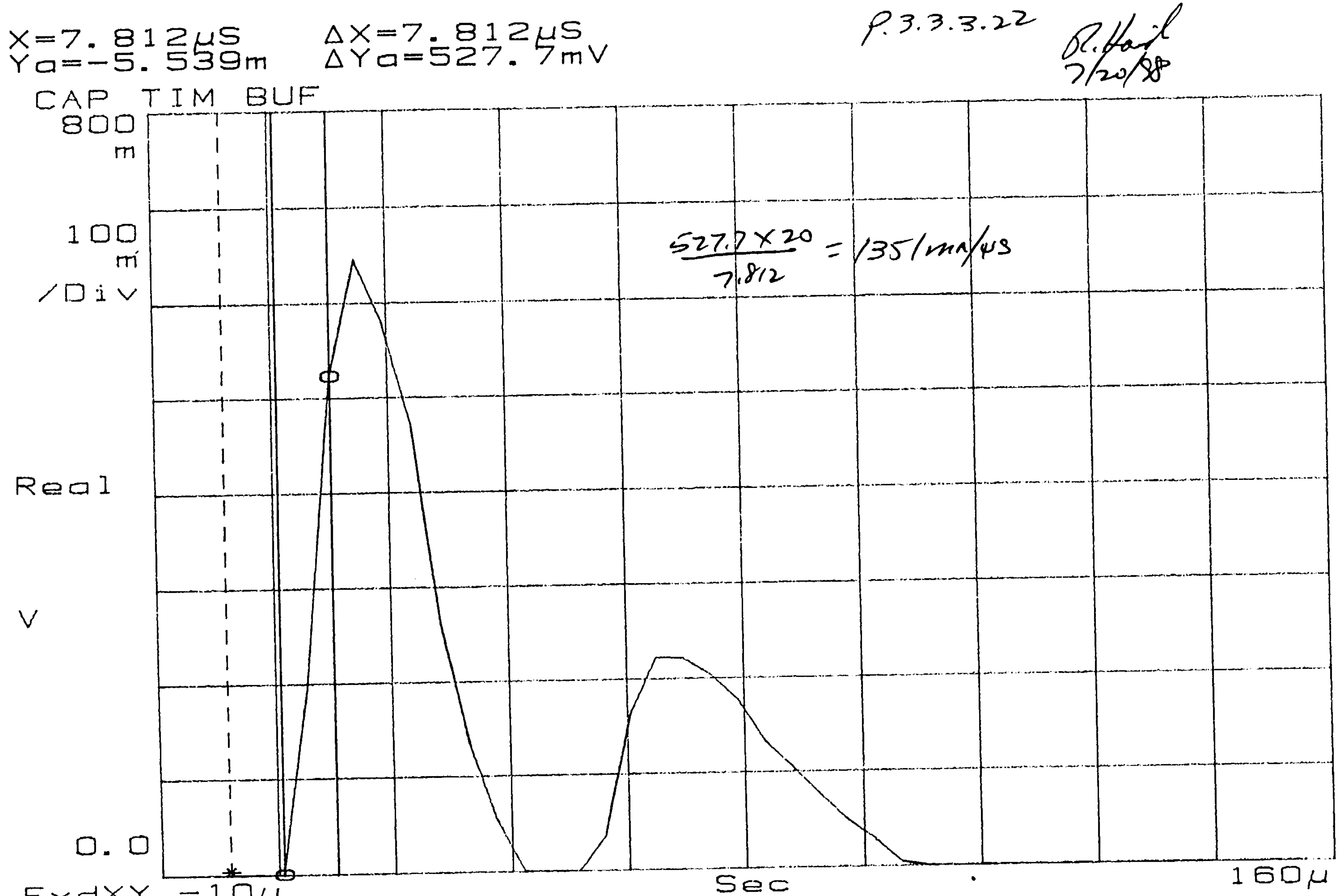
X=19.531µSec
Ya=646.213mV
CAP TIM BUF



NBUSS 27V A2 CDS S/N 202 FINAL CPT

SCALE FACTOR 10mV = 200ma

P.3.3.3.22 R. Hail 7/20/88



N BUSS 27V A2 EOS S/N 202 FINAL CPT

SCALE FACTOR
10mV = 200ma

TEST DATA SHEET NO. 7
Passive Analog Interface Test (Paragraph 3.3.4)

Number	Thermistor	Required Temperature (°Celsius)	Measured Temperature (Celsius)	Pass/Fail
1	A2 SCAN MOTOR	* ±5	22.69	PASS
2	A2 RF SHELF # 1	* ±5	22.97	
3	A2 WARM LOAD	* ±5	23.08	
4	A2 RF SHELF # 2	* ±5	23.14	PASS

* The measured temperature of the unit environment.

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ______ LPT ______

Ken Shane 7/16/98
Test Systems Engineer Date

261 JUL 17 1998
Quality Control Date

2377 9/24/98
Customer Representative Date

EOS A2-04 E2.EXE;26 NO MODE 16-JUL-98 18:48:521 SCAN NUMBER 104

[5] SCIENCE DATA ELEMENT 0000

[6] CONTROL/STATUS ELEMENT 00

[7] ENGINEERING ELEMENT 00

NO	UNPOWERED THERMISTORS DATA	TEMP C
1	SCAN MOTOR TEMPERATURE	22.69
2	RF SHELF TEMPERATURE #1	22.91
3	WARM LOAD TEMPERATURE	23.08
4	RF SHELF TEMPERATURE #2	23.08

ENGR FAIL POWER OFF CHECKSUM IN 9E1A CALC 9E1A SA28 1496 SA29 1496

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT BUTTON 2

SHEET 74 OF ___
ECR NO. 1826

TEST DATA SHEET NO. 8
Instrument Commanding Test (Paragraph 3.3.5.2)

QC 223
6-4-98

Step	Instrument Status	(Y)es / (N)o
12	Full Scan Mode command received?	Y
13	Is A2 motor scanning?	Y
14	Did A2 motor stop scanning?	Y
15	Is A2 motor scanning?	Y
16	Reflector positioned looking at warm loads?	Y
17	Reflector positioned looking at nadir?	Y
18	Reflector positioned looking at cold cal 1?	Y
19	Reflector positioned looking at cold cal 4?	Y
20	Reflector positioned looking at cold cal 3?	Y
21	Reflector positioned looking at cold cal 2?	Y
22	Reflector positioned looking at cold cal 1?	Y
23	Did C&DH processor reset?	Y

Yes = Pass   No = Fail

EOS/AMSU-A2 System P/N 1356006   Shop Order: 509734   S/N: 202
Circle Test: 1st CPT   Final CPT   Sub CPT ________   LPT ________

Ken Shaw   7/16/98
Test Systems Engineer   Date

JUL 17 1998
Quality Control   Date

9/24/98
Customer Representative   Date

TEST DATA SHEET NO. 9 (sheet 1 of 3)

Science and Engineering Data Test (Full Scan Mode) (Paragraph 3.3.5.3.1)

Step	Instrument Status	(Y)es / (N)o
1	Full Scan Mode command received?	Y
2	ENGR OK message seen?	Y
3	Unit running in full scan mode?	Y

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
4a	1-2	Packet ID		0000100100100010	P
4b	3-4	Packet Length		0000000101011101	P
4c	5-6	Unit Serial Number		0000010000000000	P
4d	7-8	Instrument Mode/ Status		1000100000000010	P

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
4f	Review All Scene Data	12500-20500	P

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
4g	262-298	Review All PRT Data	10-40 degrees C	P
4g	300	Temperature Sensor Reference	23244-26317 counts	P

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
4h	Antenna in Full Scan Mode		YES	P
	Antenna in Warm Cal Mode		NO	
	Antenna in Cold Cal Mode		NO	
	Antenna in Nadir Mode		NO	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	P
	ADC Latchup Flag		ONE	P

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202

Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

2377 9/24/98
Customer Representative Date

7/16/98
Test Systems Engineer Date

261 JUL 17 1998
Quality Control Date

AE-26156/10
7 Apr 98

SHEET 26 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 9 (sheet 2 of 3)
Science and Engineering Data Test (Full Scan Mode) (Paragraph 3.3.5.3.1)

A2 REFLECTOR POSITIONS (Step 4e)

BP	Element	Position (*)	Required (**) +/- 5	(P)ass/ (F)ail
1	12		8035	P
2	20		7883	P
3	28		7731	P
4	36		7580	P
5	44		7428	P
6	52		7276	P
7	60		7125	P
8	68		6973	P
9	76		6821	P
10	84		6670	P
11	92		6518	P
12	100		6366	P
13	108		6215	P
14	116		6063	P
15	124		5911	P
16	132		5760	P
17	140		5608	P
18	148		5456	P
19	156		5305	P
20	164		5153	P
21	172		5001	P
22	180		4850	P
23	188		4698	P
24	196		4546	P
25	204		4395	P
26	212		4243	P
27	220		4091	P
28	228		3940	P
29	236		3788	P
30	244		3636	P
CC	252		2043	P
WC	304		14028	P

* Actual counts from printout. Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Ken Shaw 7/16/98
Test Systems Engineer Date

JUL 17 1998
Quality Control Date

9/24/98
Customer Representative Date

TEST DATA SHEET NO. 9 (sheet 3 of 3)
Science and Engineering Data Test (Full Scan Mode) (Paragraph 3.3.5.3.1)

ENGINEERING DATA				
Step	Description	Measured*	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	P
	Signal Processor (+15 VDC)		+14 to +16 volts	P
	Signal Processor (-15 VDC)		-14 to -16 volts	P
	Scan Drive (+5 VDC)		+4 to +6 volts	P
	Scan Drive (+15 VDC)		+14 to +16 volts	P
	Scan Drive (-15 VDC)		-14 to -16 volts	P
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	P
	LO Channel 1		+9 to +11 volts	P
	LO Channel 2		+9 to +11 volts	P
	Quiet Bus Current		≤ 1 Amps	P
	Noisy Bus Current		≤ 150 milliamps	P

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: 504734 S/N: 202

Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Test Systems Engineer 7/16/98 Date

Quality Control 261 JUL 17 1998 Date

2372

Customer Representative 9/24/98 Date

EOS A2-04 E2.EXE;26 FULL SCAN MODE 16-JUL-98 21:40:242 SCAN NUMBER 240

[5] SCIENCE DATA ELEMENT 0000

[6] CONTROL/STATUS ELEMENT 00

[7] ENGINEERING ELEMENT 00

COMMANDS

[9] SCANNER A2 POWER =	ON	COLD CAL POSITION 1 =	YES [14]
[10] ANTENNA IN FULL SCAN MODE =	YES	COLD CAL POSITION 2 =	NO [15]
[11] ANTENNA IN WARM CAL POSIT =	NO	COLD CAL POSITION 3 =	NO [16]
[12] ANTENNA IN COLD CAL POSIT =	NO	COLD CAL POSITION 4 =	NO [17]
[13] ANTENNA IN NADIR POSITION =	NO	RESET C&DH PROCESSOR	[18]
		GSE MODE	[19]

ENGR OK POWER ON CHECKSUM IN B5D7 CALC B5D7 SA28 83 SA29 83

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT BUTTON 3

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	5604
2		00100010	140	REFL POS 17 2ND LOOK	5609
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17326
4		01011101	144	CH 2	17300
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	5451
6		00000000	148	REFL POS 18 2ND LOOK	5457
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17328
8		00000010	152	CH 2	17302
10	REFLECTOR POSITION 1	8032	154	REFLECTOR POSITION 19	5300
12	REFL POS 1 2ND LOOK	8032	156	REFL POS 19 2ND LOOK	5305
14	SCENE DATA BP 1 CH 1	17324	158	SCENE DATA BP 19 CH 1	17332
16	CH 2	17304	160	CH 2	17303
18	REFLECTOR POSITION 2	7881	162	REFLECTOR POSITION 20	5152
20	REFL POS 2 2ND LOOK	7882	164	REFL POS 20 2ND LOOK	5153
22	SCENE DATA BP 2 CH 1	17327	166	SCENE DATA BP 20 CH 1	17329
24	CH 2	17302	168	CH 2	17309
26	REFLECTOR POSITION 3	7729	170	REFLECTOR POSITION 21	5000
28	REFL POS 3 2ND LOOK	7730	172	REFL POS 21 2ND LOOK	5002
30	SCENE DATA BP 3 CH 1	17332	174	SCENE DATA BP 21 CH 1	17330
32	CH 2	17308	176	CH 2	17312
34	REFLECTOR POSITION 4	7579	178	REFLECTOR POSITION 22	4849
36	REFL POS 4 2ND LOOK	7581	180	REFL POS 22 2ND LOOK	4851
38	SCENE DATA BP 4 CH 1	17328	182	SCENE DATA BP 22 CH 1	17332
40	CH 2	17304	184	CH 2	17300
42	REFLECTOR POSITION 5	7426	186	REFLECTOR POSITION 23	4696
44	REFL POS 5 2ND LOOK	7428	188	REFL POS 23 2ND LOOK	4699
46	SCENE DATA BP 5 CH 1	17325	190	SCENE DATA BP 23 CH 1	17331
48	CH 2	17304	192	CH 2	17306
50	REFLECTOR POSITION 6	7275	194	REFLECTOR POSITION 24	4545
52	REFL POS 6 2ND LOOK	7276	196	REFL POS 24 2ND LOOK	4547
54	SCENE DATA BP 6 CH 1	17329	198	SCENE DATA BP 24 CH 1	17329
56	CH 2	17303	200	CH 2	17310
58	REFLECTOR POSITION 7	7123	202	REFLECTOR POSITION 25	4394
60	REFL POS 7 2ND LOOK	7125	204	REFL POS 25 2ND LOOK	4395
62	SCENE DATA BP 7 CH 1	17332	206	SCENE DATA BP 25 CH 1	17326
64	CH 2	17303	208	CH 2	17303
66	REFLECTOR POSITION 8	6969	210	REFLECTOR POSITION 26	4238
68	REFL POS 8 2ND LOOK	6974	212	REFL POS 26 2ND LOOK	4243
70	SCENE DATA BP 8 CH 1	17328	214	SCENE DATA BP 26 CH 1	17329
72	CH 2	17302	216	CH 2	17304
74	REFLECTOR POSITION 9	6817	218	REFLECTOR POSITION 27	4087
76	REFL POS 9 2ND LOOK	6821	220	REFL POS 27 2ND LOOK	4091
78	SCENE DATA BP 9 CH 1	17326	222	SCENE DATA BP 27 CH 1	17328
80	CH 2	17306	224	CH 2	17304
82	REFLECTOR POSITION 10	6665	226	REFLECTOR POSITION 28	3937
84	REFL POS 10 2ND LOOK	6670	228	REFL POS 28 2ND LOOK	3939
86	SCENE DATA BP 10 CH 1	17332	230	SCENE DATA BP 28 CH 1	17325
88	CH 2	17303	232	CH 2	17302
90	REFLECTOR POSITION 11	6517	234	REFLECTOR POSITION 29	3787
92	REFL POS 11 2ND LOOK	6519	236	REFL POS 29 2ND LOOK	3788

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17332	238	SCENE DATA BP 29 CH 1	17331
96	CH 2	17305	240	CH 2	17302
98	REFLECTOR POSITION 12	6364	242	REFLECTOR POSITION 30	3635
100	REFL POS 12 2ND LOOK	6367	244	REFL POS 30 2ND LOOK	3637
102	SCENE DATA BP 12 CH 1	17334	246	SCENE DATA BP 30 CH 1	17327
104	CH 2	17303	248	CH 2	17302
106	REFLECTOR POSITION 13	6212	250	REFLECTOR COLD CAL POS	2041
108	REFL POS 13 2ND LOOK	6216	252	REFL COLD CAL 2ND LOOK	2043
110	SCENE DATA BP 13 CH 1	17331	254	COLD CAL DATA 1 CH 1	17326
112	CH 2	17302	256	CH 2	17298
114	REFLECTOR POSITION 14	6062	258	COLD CAL DATA 2 CH 1	17326
116	REFL POS 14 2ND LOOK	6065	260	CH 2	17306
118	SCENE DATA BP 14 CH 1	17333	302	REFLECTOR WARM CAL POS	14028
120	CH 2	17312	304	REFL WARM CAL 2ND LOOK	14027
122	REFLECTOR POSITION 15	5909	306	WARM CAL DATA 1 CH 1	17315
124	REFL POS 15 2ND LOOK	5912	308	CH 2	17293
126	SCENE DATA BP 15 CH 1	17320	310	WARM CAL DATA 2 CH 1	17314
128	CH 2	17309	312	CH 2	17299
130	REFLECTOR POSITION 16	5758			
132	REFL POS 16 2ND LOOK	5757			
134	SCENE DATA BP 16 CH 1	17325			
136	CH 2	17322			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18129	22.45
264	FEED HORN	17648	22.71
266	RF MUX	17855	23.18
268	MIXER/IF AMPLIFIER CHANNEL 1	18264	23.86
270	MIXER/IF AMPLIFIER CHANNEL 2	18437	23.89
272	LOCAL OSCILLATOR CHANNEL 1	18003	23.58
274	LOCAL OSCILLATOR CHANNEL 2	18500	24.04
276	I553 INTERFACE	13228	27.70
278	SUB REFLECTOR	17669	22.58
280	DC/DC CONVERTER	18631	24.88
282	RF SHELF	18118	22.92
284	DETECTOR/PREAMP ASSEMBLY	18380	23.06
286	WARM LOAD CENTER	22750	22.95
288	WARM LOAD 2	23293	22.85
290	WARM LOAD 3	22903	22.89
292	WARM LOAD 4	22779	22.95
294	WARM LOAD 5	22766	22.95
296	WARM LOAD 6	23269	22.95
298	WARM LOAD 1	23122	22.91
300	TEMP SENSOR REFERENCE VOLTAGE	25088	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	YES
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22128	4.93
	+15 VDC	21826	15.06
	-15 VDC	21860	-15.07
ANTENNA DRIVE	+5 VDC	22066	4.94
	+15 VDC	22006	14.99
	-15 VDC	21821	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21687	9.94
LO CHANNEL 1	+10 VDC	21265	10.06
LO CHANNEL 2	+10 VDC	21377	10.03
QUIET BUS CURRENT		13399	603.43
NOISY BUS CURRENT		17753	113.82

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

N/A. This section was performed on 7/16/98 (see attached copy. TDS 10 page A18) 9/3/98

TEST DATA SHEET NO. 10 (sheet 2 of 2)
Science and Engineering Data Test (Warm Cal Mode) (Paragraph 3.3.5.3.2)

A2 REFLECTOR POSITIONS (Step 4e)			
Beam Positions	Position Range (*)	Required (**) +/- 5 counts	(P)ass/ (F)ail
1-30			

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Warm Cal Position

ENGINEERING DATA				
Step	Description	Measured***	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	
	Signal Processor (+15 VDC)		+14 to +16 volts	
	Signal Processor (-15 VDC)		-14 to -16 volts	
	Scan Drive (+5 VDC)		+4 to +6 volts	
	Scan Drive (+15 VDC)		+14 to +16 volts	
	Scan Drive (-15 VDC)		-14 to -16 volts	
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	
	LO Channel 1		+9 to +11 volts	
	LO Channel 2		+9 to +11 volts	
	Quiet Bus Current		≤ 1 Amps	
	Noisy Bus Current		≤ 150 milliamps	

*** Rewriting printout data on this data sheet is optional.

Instrument Mode	Noisy Bus Current (ma) *	Pass/Fail
Warm Cal Scanner ON	20mA	Not Applicable
Cold Cal Scanner ON	20mA	Not Applicable
Nadir Scanner ON	20mA	Not Applicable

* Performed @ 29.0Vdc

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ______ LPT ______

AMSU 4 SEIT 9-3-98
Test Systems Engineer Date

9-3-98
Quality Control Date

2377 9/24/98
Customer Representative Date

AE-26156/10
7 Apr 98

SHEET 18 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 10 (Sheet 1 of 2)
Science and Engineering Data Test (Warm Cal Mode) (Paragraph 3.3.5.3.2)

Step	Instrument Status	(Y)es / (N)o
1	Warm Cal Mode command received?	Y
2	ENGR OK message seen?	Y
3	Reflector positioned at warm load?	Y

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
4a	1-2	Packet ID		0000100100100001	P
4b	3-4	Packet Length		0000000101000101	P
4c	5-6	Unit Serial Number		0000010000000000	P
4d	7-8	Instrument Mode/ Status		1000100000000100	P

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
4f	Review All Scene Data	12500-20500	P

QC 222 6-4-98 ENG 224

PRT TEMPERATURE DATA			
Step	Element	Description	Required	(P)ass/(F)ail
4g	262-298 ~~**~~	Review All PRT Data	10-40 degrees C	P
4g	300	Temperature Sensor Reference	23244-26317 counts	P

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
4h	Antenna in Full Scan Mode		NO	P
	Antenna in Warm Cal Mode		YES	P
	Antenna in Cold Cal Mode		NO	P
	Antenna in Nadir Mode		NO	P
	Cold Cal Position LSB		ZERO	P
	Cold Cal Position MSB		ZERO	P
	A2 Scanner Power		ON	P
	ADC Latchup Flag		ONE	P

* Rewriting printout data on this data sheet is optional. QC 223
~~** Except for element 276 > 40°C.~~ ENG 224 6-4-98

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Ken Shane 7/16/98
Test Systems Engineer Date

2377 9/24/98
Customer Representative Date

261 JUL 17 1998
Quality Control Date

TEST DATA SHEET NO. 10 (sheet 2 of 2)
Science and Engineering Data Test (Warm Cal Mode) (Paragraph 3.3.5.3.2)

A2 REFLECTOR POSITIONS (Step 4e)			
Beam Positions	Position Range (*)	Required (**) +/- 5 counts	(P)ass/(F)ail
1-30		14028	P

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Warm Cal Position

ENGINEERING DATA				
Step	Description	Measured***	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	P
	Signal Processor (+15 VDC)		+14 to +16 volts	P
	Signal Processor (-15 VDC)		-14 to -16 volts	P
	Scan Drive (+5 VDC)		+4 to +6 volts	P
	Scan Drive (+15 VDC)		+14 to +16 volts	P
	Scan Drive (-15 VDC)		-14 to -16 volts	P
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	P
	LO Channel 1		+9 to +11 volts	P
	LO Channel 2		+9 to +11 volts	P
	Quiet Bus Current		≤ 1 Amps	P
	Noisy Bus Current		≤ 150 milliamps	P

*** Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Ken [signature] 7/16/98
Test Systems Engineer Date

JUL 17 1998
Quality Control 261 Date

[signature] DCMC 9/24/98
Customer Representative Date

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EOS  A2-04  E2.EXE;26 WARM CAL MODE       16-JUL-98  22:00:232 SCAN NUMBER   390
[ 5 ] SCIENCE DATA    ELEMENT 0000
[ 6 ] CONTROL/STATUS  ELEMENT   00
[ 7 ] ENGINEERING     ELEMENT   00

                                     COMMANDS
[ 9 ]  SCANNER A2 POWER =           ON      COLD CAL POSITION 1 =       YES [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = NO      COLD CAL POSITION 2 =       NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = YES     COLD CAL POSITION 3 =       NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = NO      COLD CAL POSITION 4 =       NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO      RESET C&DH PROCESSOR            [ 18 ]
                                           GSE MODE                        [ 19 ]

ENGR OK   POWER          ON     CHECKSUM  IN  FA8 CALC  FA8    SA28    233 SA29    233
                         SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL       [ 1 ] RETURN
 SELECT BUTTON 3
```

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	14029
2		00100001	140	REFL POS 17 2ND LOOK	14029
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17268
4		01000101	144	CH 2	17268
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	14029
6		00000000	148	REFL POS 18 2ND LOOK	14029
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17270
8		00000100	152	CH 2	17266
10	REFLECTOR POSITION 1	14029	154	REFLECTOR POSITION 19	14029
12	REFL POS 1 2ND LOOK	14029	156	REFL POS 19 2ND LOOK	14029
14	SCENE DATA BP 1 CH 1	17257	158	SCENE DATA BP 19 CH 1	17267
16	CH 2	17269	160	CH 2	17269
18	REFLECTOR POSITION 2	14029	162	REFLECTOR POSITION 20	14029
20	REFL POS 2 2ND LOOK	14029	164	REFL POS 20 2ND LOOK	14029
22	SCENE DATA BP 2 CH 1	17263	166	SCENE DATA BP 20 CH 1	17267
24	CH 2	17268	168	CH 2	17270
26	REFLECTOR POSITION 3	14029	170	REFLECTOR POSITION 21	14029
28	REFL POS 3 2ND LOOK	14029	172	REFL POS 21 2ND LOOK	14029
30	SCENE DATA BP 3 CH 1	17271	174	SCENE DATA BP 21 CH 1	17267
32	CH 2	17267	176	CH 2	17266
34	REFLECTOR POSITION 4	14029	178	REFLECTOR POSITION 22	14029
36	REFL POS 4 2ND LOOK	14029	180	REFL POS 22 2ND LOOK	14029
38	SCENE DATA BP 4 CH 1	17260	182	SCENE DATA BP 22 CH 1	17265
40	CH 2	17265	184	CH 2	17272
42	REFLECTOR POSITION 5	14029	186	REFLECTOR POSITION 23	14029
44	REFL POS 5 2ND LOOK	14029	188	REFL POS 23 2ND LOOK	14029
46	SCENE DATA BP 5 CH 1	17266	190	SCENE DATA BP 23 CH 1	17266
48	CH 2	17270	192	CH 2	17268
50	REFLECTOR POSITION 6	14029	194	REFLECTOR POSITION 24	14029
52	REFL POS 6 2ND LOOK	14029	196	REFL POS 24 2ND LOOK	14029
54	SCENE DATA BP 6 CH 1	17265	198	SCENE DATA BP 24 CH 1	17266
56	CH 2	17270	200	CH 2	17268
58	REFLECTOR POSITION 7	14029	202	REFLECTOR POSITION 25	14029
60	REFL POS 7 2ND LOOK	14029	204	REFL POS 25 2ND LOOK	14029
62	SCENE DATA BP 7 CH 1	17265	206	SCENE DATA BP 25 CH 1	17265
64	CH 2	17273	208	CH 2	17271
66	REFLECTOR POSITION 8	14029	210	REFLECTOR POSITION 26	14029
68	REFL POS 8 2ND LOOK	14029	212	REFL POS 26 2ND LOOK	14029
70	SCENE DATA BP 8 CH 1	17265	214	SCENE DATA BP 26 CH 1	17263
72	CH 2	17267	216	CH 2	17271
74	REFLECTOR POSITION 9	14029	218	REFLECTOR POSITION 27	14029
76	REFL POS 9 2ND LOOK	14029	220	REFL POS 27 2ND LOOK	14029
78	SCENE DATA BP 9 CH 1	17268	222	SCENE DATA BP 27 CH 1	17266
80	CH 2	17263	224	CH 2	17270
82	REFLECTOR POSITION 10	14029	226	REFLECTOR POSITION 28	14029
84	REFL POS 10 2ND LOOK	14029	228	REFL POS 28 2ND LOOK	14029
86	SCENE DATA BP 10 CH 1	17267	230	SCENE DATA BP 28 CH 1	17266
88	CH 2	17271	232	CH 2	17267
90	REFLECTOR POSITION 11	14029	234	REFLECTOR POSITION 29	14029
92	REFL POS 11 2ND LOOK	14029	236	REFL POS 29 2ND LOOK	14029

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17265	238	SCENE DATA BP 29 CH 1	17264
96	CH 2	17263	240	CH 2	17274
98	REFLECTOR POSITION 12	14029	242	REFLECTOR POSITION 30	14029
100	REFL POS 12 2ND LOOK	14029	244	REFL POS 30 2ND LOOK	14029
102	SCENE DATA BP 12 CH 1	17263	246	SCENE DATA BP 30 CH 1	17265
104	CH 2	17265	248	CH 2	17274
106	REFLECTOR POSITION 13	14029	250	REFLECTOR COLD CAL POS	0E
108	REFL POS 13 2ND LOOK	14029	252	REFL COLD CAL 2ND LOOK	0E
110	SCENE DATA BP 13 CH 1	17267	254	COLD CAL DATA 1 CH 1	0
112	CH 2	17264	256	CH 2	0
114	REFLECTOR POSITION 14	14029	258	COLD CAL DATA 2 CH 1	0
116	REFL POS 14 2ND LOOK	14029	260	CH 2	0
118	SCENE DATA BP 14 CH 1	17267	302	REFLECTOR WARM CAL POS	0E
120	CH 2	17268	304	REFL WARM CAL 2ND LOOK	0E
122	REFLECTOR POSITION 15	14029	306	WARM CAL DATA 1 CH 1	0
124	REFL POS 15 2ND LOOK	14029	308	CH 2	0
126	SCENE DATA BP 15 CH 1	17266	310	WARM CAL DATA 2 CH 1	0
128	CH 2	17267	312	CH 2	0
130	REFLECTOR POSITION 16	14029			
132	REFL POS 16 2ND LOOK	14029			
134	SCENE DATA BP 16 CH 1	17269			
136	CH 2	17267			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18270	22.71
264	FEED HORN	17882	23.16
266	RF MUX	18221	23.87
268	MIXER/IF AMPLIFIER CHANNEL 1	18668	24.63
270	MIXER/IF AMPLIFIER CHANNEL 2	18869	24.72
272	LOCAL OSCILLATOR CHANNEL 1	18394	24.33
274	LOCAL OSCILLATOR CHANNEL 2	18945	24.89
276	I553 INTERFACE	13765	28.73
278	SUB REFLECTOR	17745	22.72
280	DC/DC CONVERTER	19558	26.65
282	RF SHELF	18461	23.57
284	DETECTOR/PREAMP ASSEMBLY	18780	23.83
286	WARM LOAD CENTER	22761	22.97
288	WARM LOAD 2	23304	22.88
290	WARM LOAD 3	22912	22.91
292	WARM LOAD 4	22793	22.98
294	WARM LOAD 5	22782	22.98
296	WARM LOAD 6	23281	22.98
298	WARM LOAD 1	23131	22.93
300	TEMP SENSOR REFERENCE VOLTAGE	25090	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	NO
ANTENNA IN WARM CAL MODE	YES
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22068	4.93
	+15 VDC	21834	15.05
	-15 VDC	21860	-15.07
ANTENNA DRIVE	+5 VDC	22113	4.94
	+15 VDC	22041	14.99
	-15 VDC	21866	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21689	9.94
LO CHANNEL 1	+10 VDC	21271	10.06
LO CHANNEL 2	+10 VDC	21387	10.02
QUIET BUS CURRENT		13433	604.82
NOISY BUS CURRENT		342	48.50

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

SHEET 80 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 11 (Sheet 1 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

Step	Instrument Status	(Y)es / (N)o
1	Cold Cal Mode command received?	Y
2	ENGR OK message seen?	Y
3	Reflector positioned at cold cal position 1?	Y
8	Cold Cal Position 2 command received?	Y
9	ENGR OK message seen?	Y
10	Reflector positioned at cold cal position 2?	Y
16	Cold Cal Position 3 command received?	Y
17	ENGR OK message seen?	Y
18	Reflector positioned at cold cal position 3?	Y
24	Cold Cal Position 4 command received?	Y
25	ENGR OK message seen?	Y
26	Reflector positioned at cold cal position 4?	Y

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
6a	1-2	Packet ID		0000100100100001	P
6b	3-4	Packet Length		0000000101000101	P
6c	5-6	Unit Serial Number		0000010000000000	P
6d	7-8	Instrument Mode/ Status		1000100000001000	P
14a	7-8	Instrument Mode/ Status		1000100000101000	P
22a	7-8	Instrument Mode/ Status		1000100001001000	P
30a	7-8	Instrument Mode/ Status		1000100001101000	P

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
6f	Review All Scene Data	12500-20500	P

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
6g	262-298~~**~~	Review All PRT Data	10-40 degrees C	P
6g	300	Temperature Sensor Reference	23244-26317 counts	P

* Rewriting printout data on this data sheet is optional.
~~** Except for element 276 > 40°C.~~

QC 223 6-4-98 ENG 224

91 30

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ____ LPT

9/24/98 | 7/20/98 | Ken Shaw 7/16/98
CUSTOMER Representative Date | Quality Control Date | Test Systems Engineer Date

TEST DATA SHEET NO. 11 (sheet 2 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
6h	Antenna in Full Scan Mode		NO	P
	Antenna in Warm Cal Mode		NO	
	Antenna in Cold Cal Mode		YES	
	Antenna in Nadir Mode		NO	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	
	ADC Latchup Flag		ONE	P
14b	Cold Cal Position LSB		ONE	P
	Cold Cal Position MSB		ZERO	P
22b	Cold Cal Position LSB		ZERO	P
	Cold Cal Position MSB		ONE	P
30b	Cold Cal Position LSB		ONE	P
	Cold Cal Position MSB		ONE	P

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Ken Shaw 7/16/98
Test Systems Engineer Date

261
JUL 17 1998
Quality Control Date

9/24/98
Customer Representative Date

SHEET 82 OF ___
ECR NO. 1826

TEST DATA SHEET NO. 11 (sheet 3 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

6/6/98 QC 236 ENG 252

A2 REFLECTOR POSITIONS (Step ~~6c~~ step)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30	2046	2043	P

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #1

A2 REFLECTOR POSITIONS (Step 14c)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30	2116	2119	P

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #2

A2 REFLECTOR POSITIONS (Step 22c)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30	2198	2195	P

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #3

A2 REFLECTOR POSITIONS (Step 30c)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30	2349	2346	P

* Actual range (min to max) of counts from printout (Only beam positions 1-30). Rewriting counts on this data sheet is optional.
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal Position #4

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Ken Shaw 7/16/98
Test Systems Engineer Date

2377 7/24/98
Customer Representative Date

261 JUL 17 1998
Quality Control Date

TEST DATA SHEET NO. 11 (sheet 4 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

QC 218

A2 REFLECTOR POSITION (Step ~~6e~~ 4a R.M. 6-5-98)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 1	2042	2043	P

* Actual count from printout (Only beam position Cold Cal 1).
** Required count from AE26002/2 TDS 6 ± 5 counts for Cold Cal 1

QC 218

A2 REFLECTOR POSITION (Step ~~6e~~ 11a R.M. 6-5-98)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 2	2114	2119	P

* Actual count from printout (Only beam position Cold Cal 2).
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal 2

QC 218

A2 REFLECTOR POSITION (Step ~~6e~~ 19a R.M. 6-5-98)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 3	2195	2195	P

* Actual count from printout (Only beam position Cold Cal 3).
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal 3

QC 218

A2 REFLECTOR POSITION (Step ~~6e~~ 27a R.M. 6-5-98)			
Beam Positions	Actual Beam Count*	Required** Beam Count (± 5 counts)	(P)ass/ (F)ail
Cold Cal 4	2346	2346	P

* Actual count from printout (Only beam position Cold Cal 4).
** Required counts from AE26002/2 TDS 6 +/- 5 counts for Cold Cal 4

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ______ LPT ______

Ken Shaw 7/16/98
Test Systems Engineer Date

2377 9/24/98
Customer Representative Date

JUL 17 1998
Quality Control Date

SHEET 84 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 11 (sheet 5 of 5)
Science and Engineering Data Test (Cold Cal Mode) (Paragraph 3.3.5.3.3)

ENGINEERING DATA				
Step	Description	Measured*	Required	(P)ass/(F)ail
6i	Signal Processor (+5 VDC)		+4 to +6 volts	P
	Signal Processor (+15 VDC)		+14 to +16 volts	P
	Signal Processor (-15 VDC)		-14 to -16 volts	P
	Scan Drive (+5 VDC)		+4 to +6 volts	P
	Scan Drive (+15 VDC)		+14 to +16 volts	P
	Scan Drive (-15 VDC)		-14 to -16 volts	P
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	P
	LO Channel 1		+9 to +11 volts	P
	LO Channel 2		+9 to +11 volts	P
	Quiet Bus Current		≤ 1 Amps	P
	Noisy Bus Current		≤ 150 milliamps	P

* Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: S09734 S/N: 262
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Customer Representative 9/24/98 Date

Test Systems Engineer 7/16/98 Date

Quality Control JUL 17 1998 Date

```
EOS  A2-04  E2.EXE;26  FULL SCAN MODE     16-JUL-98   22:12:402 SCAN NUMBER    482
[ 5 ] SCIENCE DATA     ELEMENT 0000
[ 6 ] CONTROL/STATUS   ELEMENT    00
[ 7 ] ENGINEERING      ELEMENT.   00

                                      COMMANDS
[ 9 ]  SCANNER A2 POWER =            ON     COLD CAL POSITION 1 =        YES [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = YES      COLD CAL POSITION 2 =        NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO       COLD CAL POSITION 3 =        NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = NO       COLD CAL POSITION 4 =        NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO       RESET C&DH PROCESSOR             [ 18 ]
                                            GSE MODE                         [ 19 ]

ENGR OK    POWER          ON     CHECKSUM  IN D469 CALC D469   SA28    325 SA29    325
                          SCREEN ONLY [ 2 ]  PRINT   [ 3 ] FULL        [ 1 ] RETURN
 SELECT BUTTON 3
```

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	5604
2		00100010	140	REFL POS 17 2ND LOOK	5609
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17268
4		01011101	144	CH 2	17271
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	5452
6		00000000	148	REFL POS 18 2ND LOOK	5456
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17270
8		00000010	152	CH 2	17264
10	REFLECTOR POSITION 1	8033	154	REFLECTOR POSITION 19	5300
12	REFL POS 1 2ND LOOK	8033	156	REFL POS 19 2ND LOOK	5305
14	SCENE DATA BP 1 CH 1	17265	158	SCENE DATA BP 19 CH 1	17267
16	CH 2	17275	160	CH 2	17278
18	REFLECTOR POSITION 2	7881	162	REFLECTOR POSITION 20	5152
20	REFL POS 2 2ND LOOK	7882	164	REFL POS 20 2ND LOOK	5153
22	SCENE DATA BP 2 CH 1	17268	166	SCENE DATA BP 20 CH 1	17273
24	CH 2	17268	168	CH 2	17273
26	REFLECTOR POSITION 3	7730	170	REFLECTOR POSITION 21	4999
28	REFL POS 3 2ND LOOK	7731	172	REFL POS 21 2ND LOOK	5002
30	SCENE DATA BP 3 CH 1	17270	174	SCENE DATA BP 21 CH 1	17266
32	CH 2	17288	176	CH 2	17271
34	REFLECTOR POSITION 4	7579	178	REFLECTOR POSITION 22	4849
36	REFL POS 4 2ND LOOK	7580	180	REFL POS 22 2ND LOOK	4851
38	SCENE DATA BP 4 CH 1	17266	182	SCENE DATA BP 22 CH 1	17262
40	CH 2	17273	184	CH 2	17275
42	REFLECTOR POSITION 5	7427	186	REFLECTOR POSITION 23	4697
44	REFL POS 5 2ND LOOK	7429	188	REFL POS 23 2ND LOOK	4699
46	SCENE DATA BP 5 CH 1	17265	190	SCENE DATA BP 23 CH 1	17266
48	CH 2	17269	192	CH 2	17268
50	REFLECTOR POSITION 6	7275	194	REFLECTOR POSITION 24	4545
52	REFL POS 6 2ND LOOK	7276	196	REFL POS 24 2ND LOOK	4546
54	SCENE DATA BP 6 CH 1	17273	198	SCENE DATA BP 24 CH 1	17267
56	CH 2	17273	200	CH 2	17275
58	REFLECTOR POSITION 7	7123	202	REFLECTOR POSITION 25	4394
60	REFL POS 7 2ND LOOK	7125	204	REFL POS 25 2ND LOOK	4394
62	SCENE DATA BP 7 CH 1	17268	206	SCENE DATA BP 25 CH 1	17271
64	CH 2	17271	208	CH 2	17269
66	REFLECTOR POSITION 8	6970	210	REFLECTOR POSITION 26	4239
68	REFL POS 8 2ND LOOK	6974	212	REFL POS 26 2ND LOOK	4243
70	SCENE DATA BP 8 CH 1	17265	214	SCENE DATA BP 26 CH 1	17266
72	CH 2	17277	216	CH 2	17272
74	REFLECTOR POSITION 9	6817	218	REFLECTOR POSITION 27	4089
76	REFL POS 9 2ND LOOK	6822	220	REFL POS 27 2ND LOOK	4092
78	SCENE DATA BP 9 CH 1	17268	222	SCENE DATA BP 27 CH 1	17267
80	CH 2	17266	224	CH 2	17272
82	REFLECTOR POSITION 10	6665	226	REFLECTOR POSITION 28	3936
84	REFL POS 10 2ND LOOK	6670	228	REFL POS 28 2ND LOOK	3939
86	SCENE DATA BP 10 CH 1	17265	230	SCENE DATA BP 28 CH 1	17268
88	CH 2	17275	232	CH 2	17274
90	REFLECTOR POSITION 11	6518	234	REFLECTOR POSITION 29	3786
92	REFL POS 11 2ND LOOK	6519	236	REFL POS 29 2ND LOOK	3788

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17271	238	SCENE DATA BP 29 CH 1	17268
96	CH 2	17266	240	CH 2	17266
98	REFLECTOR POSITION 12	6365	242	REFLECTOR POSITION 30	3635
100	REFL POS 12 2ND LOOK	6367	244	REFL POS 30 2ND LOOK	3637
102	SCENE DATA BP 12 CH 1	17270	246	SCENE DATA BP 30 CH 1	17266
104	CH 2	17271	248	CH 2	17268
106	REFLECTOR POSITION 13	6213	250	REFLECTOR COLD CAL POS	2041
108	REFL POS 13 2ND LOOK	6216	252	REFL COLD CAL 2ND LOOK	2042
110	SCENE DATA BP 13 CH 1	17274	254	COLD CAL DATA 1 CH 1	17265
112	CH 2	17275	256	CH 2	17257
114	REFLECTOR POSITION 14	6062	258	COLD CAL DATA 2 CH 1	17264
116	REFL POS 14 2ND LOOK	6065	260	CH 2	17260
118	SCENE DATA BP 14 CH 1	17267	302	REFLECTOR WARM CAL POS	14028
120	CH 2	17272	304	REFL WARM CAL 2ND LOOK	14028
122	REFLECTOR POSITION 15	5910	306	WARM CAL DATA 1 CH 1	17254
124	REFL POS 15 2ND LOOK	5912	308	CH 2	17262
126	SCENE DATA BP 15 CH 1	17261	310	WARM CAL DATA 2 CH 1	17249
128	CH 2	17286	312	CH 2	17263
130	REFLECTOR POSITION 16	5758			
132	REFL POS 16 2ND LOOK	5760			
134	SCENE DATA BP 16 CH 1	17264			
136	CH 2	17285			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18289	22.74
264	FEED HORN	17983	23.35
266	RF MUX	18383	24.18
268	MIXER/IF AMPLIFIER CHANNEL 1	18847	24.98
270	MIXER/IF AMPLIFIER CHANNEL 2	19031	25.03
272	LOCAL OSCILLATOR CHANNEL 1	18572	24.66
274	LOCAL OSCILLATOR CHANNEL 2	19129	25.24
276	I553 INTERFACE	13943	29.08
278	SUB REFLECTOR	17811	22.85
280	DC/DC CONVERTER	19828	27.17
282	RF SHELF	18621	23.88
284	DETECTOR/PREAMP ASSEMBLY	18963	24.18
286	WARM LOAD CENTER	22799	23.05
288	WARM LOAD 2	23342	22.95
290	WARM LOAD 3	22942	22.97
292	WARM LOAD 4	22831	23.06
294	WARM LOAD 5	22819	23.05
296	WARM LOAD 6	23316	23.05
298	WARM LOAD 1	23167	23.00
300	TEMP SENSOR REFERENCE VOLTAGE	25090	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	YES
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22081	4.93
	+15 VDC	21837	15.05
	-15 VDC	21860	-15.07
ANTENNA DRIVE	+5 VDC	22052	4.94
	+15 VDC	21981	14.99
	-15 VDC	21812	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21689	9.94
LO CHANNEL 1	+10 VDC	21274	10.06
LO CHANNEL 2	+10 VDC	21387	10.02
QUIET BUS CURRENT		13419	604.94
NOISY BUS CURRENT		17890	88.08

PRT TEMPERATURES	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

```
EOS  A2-04  E2.EXE;26 COLD CAL MODE      16-JUL-98  22:15:272 SCAN NUMBER   503
[ 5 ] SCIENCE DATA    ELEMENT 0000
[ 6 ] CONTROL/STATUS  ELEMENT   00
[ 7 ] ENGINEERING     ELEMENT   00

                                      COMMANDS
[ 9 ]  SCANNER A2 POWER =            ON    COLD CAL POSITION 1 =      YES [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = NO      COLD CAL POSITION 2 =      NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO      COLD CAL POSITION 3 =      NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = YES     COLD CAL POSITION 4 =      NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO      RESET C&DH PROCESSOR           [ 18 ]
                                           GSE MODE                       [ 19 ]

ENGR OK   POWER         ON     CHECKSUM  IN 40FB CALC 40FB   SA28    346 SA29    346
                        SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL          [ 1 ] RETURN
 SELECT BUTTON 3
```

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	2046
2		00100001	140	REFL POS 17 2ND LOOK	2046
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17260
4		01000101	144	CH 2	17264
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	2046
6		00000000	148	REFL POS 18 2ND LOOK	2046
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17259
8		00001000	152	CH 2	17262
10	REFLECTOR POSITION 1	2046	154	REFLECTOR POSITION 19	2046
12	REFL POS 1 2ND LOOK	2046	156	REFL POS 19 2ND LOOK	2046
14	SCENE DATA BP 1 CH 1	17260	158	SCENE DATA BP 19 CH 1	17263
16	CH 2	17260	160	CH 2	17267
18	REFLECTOR POSITION 2	2046	162	REFLECTOR POSITION 20	2046
20	REFL POS 2 2ND LOOK	2046	164	REFL POS 20 2ND LOOK	2046
22	SCENE DATA BP 2 CH 1	17260	166	SCENE DATA BP 20 CH 1	17264
24	CH 2	17263	168	CH 2	17262
26	REFLECTOR POSITION 3	2046	170	REFLECTOR POSITION 21	2046
28	REFL POS 3 2ND LOOK	2046	172	REFL POS 21 2ND LOOK	2046
30	SCENE DATA BP 3 CH 1	17267	174	SCENE DATA BP 21 CH 1	17261
32	CH 2	17267	176	CH 2	17264
34	REFLECTOR POSITION 4	2046	178	REFLECTOR POSITION 22	2046
36	REFL POS 4 2ND LOOK	2046	180	REFL POS 22 2ND LOOK	2046
38	SCENE DATA BP 4 CH 1	17268	182	SCENE DATA BP 22 CH 1	17267
40	CH 2	17261	184	CH 2	17263
42	REFLECTOR POSITION 5	2046	186	REFLECTOR POSITION 23	2046
44	REFL POS 5 2ND LOOK	2046	188	REFL POS 23 2ND LOOK	2046
46	SCENE DATA BP 5 CH 1	17266	190	SCENE DATA BP 23 CH 1	17264
48	CH 2	17263	192	CH 2	17256
50	REFLECTOR POSITION 6	2046	194	REFLECTOR POSITION 24	2046
52	REFL POS 6 2ND LOOK	2046	196	REFL POS 24 2ND LOOK	2046
54	SCENE DATA BP 6 CH 1	17266	198	SCENE DATA BP 24 CH 1	17260
56	CH 2	17265	200	CH 2	17262
58	REFLECTOR POSITION 7	2046	202	REFLECTOR POSITION 25	2046
60	REFL POS 7 2ND LOOK	2046	204	REFL POS 25 2ND LOOK	2046
62	SCENE DATA BP 7 CH 1	17261	206	SCENE DATA BP 25 CH 1	17263
64	CH 2	17266	208	CH 2	17267
66	REFLECTOR POSITION 8	2046	210	REFLECTOR POSITION 26	2046
68	REFL POS 8 2ND LOOK	2046	212	REFL POS 26 2ND LOOK	2046
70	SCENE DATA BP 8 CH 1	17263	214	SCENE DATA BP 26 CH 1	17261
72	CH 2	17263	216	CH 2	17261
74	REFLECTOR POSITION 9	2046	218	REFLECTOR POSITION 27	2046
76	REFL POS 9 2ND LOOK	2046	220	REFL POS 27 2ND LOOK	2046
78	SCENE DATA BP 9 CH 1	17265	222	SCENE DATA BP 27 CH 1	17267
80	CH 2	17264	224	CH 2	17267
82	REFLECTOR POSITION 10	2046	226	REFLECTOR POSITION 28	2046
84	REFL POS 10 2ND LOOK	2046	228	REFL POS 28 2ND LOOK	2046
86	SCENE DATA BP 10 CH 1	17261	230	SCENE DATA BP 28 CH 1	17266
88	CH 2	17266	232	CH 2	17262
90	REFLECTOR POSITION 11	2046	234	REFLECTOR POSITION 29	2046
92	REFL POS 11 2ND LOOK	2046	236	REFL POS 29 2ND LOOK	2046

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17266	238	SCENE DATA BP 29 CH 1	17263
96	CH 2	17264	240	CH 2	17262
98	REFLECTOR POSITION 12	2046	242	REFLECTOR POSITION 30	2046
100	REFL POS 12 2ND LOOK	2046	244	REFL POS 30 2ND LOOK	2046
102	SCENE DATA BP 12 CH 1	17267	246	SCENE DATA BP 30 CH 1	17261
104	CH 2	17264	248	CH 2	17262
106	REFLECTOR POSITION 13	2046	250	REFLECTOR COLD CAL POS	0E
108	REFL POS 13 2ND LOOK	2046	252	REFL COLD CAL 2ND LOOK	0E
110	SCENE DATA BP 13 CH 1	17261	254	COLD CAL DATA 1 CH 1	0
112	CH 2	17266	256	CH 2	0
114	REFLECTOR POSITION 14	2046	258	COLD CAL DATA 2 CH 1	0
116	REFL POS 14 2ND LOOK	2046	260	CH 2	0
118	SCENE DATA BP 14 CH 1	17267	302	REFLECTOR WARM CAL POS	0E
120	CH 2	17263	304	REFL WARM CAL 2ND LOOK	0E
122	REFLECTOR POSITION 15	2046	306	WARM CAL DATA 1 CH 1	0
124	REFL POS 15 2ND LOOK	2046	308	CH 2	0
126	SCENE DATA BP 15 CH 1	17265	310	WARM CAL DATA 2 CH 1	0
128	CH 2	17263	312	CH 2	0
130	REFLECTOR POSITION 16	2046			
132	REFL POS 16 2ND LOOK	2046			
134	SCENE DATA BP 16 CH 1	17258			
136	CH 2	17263			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18307	22.78
264	FEED HORN	18005	23.40
266	RF MUX	18415	24.24
268	MIXER/IF AMPLIFIER CHANNEL 1	18883	25.05
270	MIXER/IF AMPLIFIER CHANNEL 2	19066	25.09
272	LOCAL OSCILLATOR CHANNEL 1	18605	24.73
274	LOCAL OSCILLATOR CHANNEL 2	19166	25.31
276	I553 INTERFACE	13974	29.13
278	SUB REFLECTOR	17824	22.87
280	DC/DC CONVERTER	19873	27.25
282	RF SHELF	18651	23.94
284	DETECTOR/PREAMP ASSEMBLY	18997	24.24
286	WARM LOAD CENTER	22807	23.06
288	WARM LOAD 2	23352	22.97
290	WARM LOAD 3	22954	23.00
292	WARM LOAD 4	22844	23.08
294	WARM LOAD 5	22828	23.07
296	WARM LOAD 6	23320	23.05
298	WARM LOAD 1	23178	23.03
300	TEMP SENSOR REFERENCE VOLTAGE	25090	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	NO
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	YES
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22123	4.93
	+15 VDC	21838	15.05
	-15 VDC	21862	-15.07
ANTENNA DRIVE	+5 VDC	22053	4.94
	+15 VDC	21979	14.99
	-15 VDC	21817	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21687	9.94
LO CHANNEL 1	+10 VDC	21273	10.06
LO CHANNEL 2	+10 VDC	21389	10.02
QUIET BUS CURRENT		13398	603.67
NOISY BUS CURRENT		599	57.40

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

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EOS  A2-04  E2.EXE;26 FULL SCAN MODE     16-JUL-98  22:40:002 SCAN NUMBER    687
[ 5 ] SCIENCE DATA    ELEMENT 0000

[ 6 ] CONTROL/STATUS  ELEMENT    00

[ 7 ] ENGINEERING     ELEMENT    00

                                      COMMANDS
[ 9 ]  SCANNER A2 POWER =            ON     COLD CAL POSITION 1 =       NO  [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = YES      COLD CAL POSITION 2 =      YES  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO       COLD CAL POSITION 3 =       NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = NO       COLD CAL POSITION 4 =       NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO       RESET C&DH PROCESSOR            [ 18 ]
                                            GSE MODE                        [ 19 ]

ENGR OK   POWER          ON     CHECKSUM  IN E9F0 CALC E9F0   SA28    530 SA29    530
                         SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL         [ 1 ] RETURN
 SELECT BUTTON 3
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ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	5604
2		00100010	140	REFL POS 17 2ND LOOK	5609
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17244
4		01011101	144	CH 2	17258
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	5452
6		00000000	148	REFL POS 18 2ND LOOK	5456
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17242
8		00100010	152	CH 2	17252
10	REFLECTOR POSITION 1	8033	154	REFLECTOR POSITION 19	5300
12	REFL POS 1 2ND LOOK	8033	156	REFL POS 19 2ND LOOK	5305
14	SCENE DATA BP 1 CH 1	17237	158	SCENE DATA BP 19 CH 1	17245
16	CH 2	17267	160	CH 2	17253
18	REFLECTOR POSITION 2	7881	162	REFLECTOR POSITION 20	5152
20	REFL POS 2 2ND LOOK	7882	164	REFL POS 20 2ND LOOK	5154
22	SCENE DATA BP 2 CH 1	17238	166	SCENE DATA BP 20 CH 1	17241
24	CH 2	17258	168	CH 2	17257
26	REFLECTOR POSITION 3	7729	170	REFLECTOR POSITION 21	5000
28	REFL POS 3 2ND LOOK	7731	172	REFL POS 21 2ND LOOK	5002
30	SCENE DATA BP 3 CH 1	17245	174	SCENE DATA BP 21 CH 1	17246
32	CH 2	17267	176	CH 2	17259
34	REFLECTOR POSITION 4	7580	178	REFLECTOR POSITION 22	4849
36	REFL POS 4 2ND LOOK	7581	180	REFL POS 22 2ND LOOK	4851
38	SCENE DATA BP 4 CH 1	17239	182	SCENE DATA BP 22 CH 1	17244
40	CH 2	17262	184	CH 2	17255
42	REFLECTOR POSITION 5	7427	186	REFLECTOR POSITION 23	4697
44	REFL POS 5 2ND LOOK	7428	188	REFL POS 23 2ND LOOK	4699
46	SCENE DATA BP 5 CH 1	17242	190	SCENE DATA BP 23 CH 1	17244
48	CH 2	17252	192	CH 2	17257
50	REFLECTOR POSITION 6	7275	194	REFLECTOR POSITION 24	4545
52	REFL POS 6 2ND LOOK	7276	196	REFL POS 24 2ND LOOK	4546
54	SCENE DATA BP 6 CH 1	17242	198	SCENE DATA BP 24 CH 1	17245
56	CH 2	17262	200	CH 2	17258
58	REFLECTOR POSITION 7	7123	202	REFLECTOR POSITION 25	4394
60	REFL POS 7 2ND LOOK	7125	204	REFL POS 25 2ND LOOK	4394
62	SCENE DATA BP 7 CH 1	17239	206	SCENE DATA BP 25 CH 1	17241
64	CH 2	17257	208	CH 2	17256
66	REFLECTOR POSITION 8	6969	210	REFLECTOR POSITION 26	4239
68	REFL POS 8 2ND LOOK	6974	212	REFL POS 26 2ND LOOK	4243
70	SCENE DATA BP 8 CH 1	17241	214	SCENE DATA BP 26 CH 1	17241
72	CH 2	17261	216	CH 2	17254
74	REFLECTOR POSITION 9	6817	218	REFLECTOR POSITION 27	4088
76	REFL POS 9 2ND LOOK	6822	220	REFL POS 27 2ND LOOK	4092
78	SCENE DATA BP 9 CH 1	17243	222	SCENE DATA BP 27 CH 1	17239
80	CH 2	17258	224	CH 2	17260
82	REFLECTOR POSITION 10	6665	226	REFLECTOR POSITION 28	3937
84	REFL POS 10 2ND LOOK	6670	228	REFL POS 28 2ND LOOK	3939
86	SCENE DATA BP 10 CH 1	17241	230	SCENE DATA BP 28 CH 1	17243
88	CH 2	17254	232	CH 2	17256
90	REFLECTOR POSITION 11	6518	234	REFLECTOR POSITION 29	3787
92	REFL POS 11 2ND LOOK	6519	236	REFL POS 29 2ND LOOK	3788

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17242	238	SCENE DATA BP 29 CH 1	17239
96	CH 2	17259	240	CH 2	17254
98	REFLECTOR POSITION 12	6364	242	REFLECTOR POSITION 30	3635
100	REFL POS 12 2ND LOOK	6367	244	REFL POS 30 2ND LOOK	3636
102	SCENE DATA BP 12 CH 1	17240	246	SCENE DATA BP 30 CH 1	17240
104	CH 2	17258	248	CH 2	17258
106	REFLECTOR POSITION 13	6213	250	REFLECTOR COLD CAL POS	2114
108	REFL POS 13 2ND LOOK	6217	252	REFL COLD CAL 2ND LOOK	2114
110	SCENE DATA BP 13 CH 1	17243	254	COLD CAL DATA 1 CH 1	17243
112	CH 2	17264	256	CH 2	17250
114	REFLECTOR POSITION 14	6062	258	COLD CAL DATA 2 CH 1	17243
116	REFL POS 14 2ND LOOK	6064	260	CH 2	17260
118	SCENE DATA BP 14 CH 1	17243	302	REFLECTOR WARM CAL POS	14028
120	CH 2	17268	304	REFL WARM CAL 2ND LOOK	14028
122	REFLECTOR POSITION 15	5910	306	WARM CAL DATA 1 CH 1	17228
124	REFL POS 15 2ND LOOK	5912	308	CH 2	17248
126	SCENE DATA BP 15 CH 1	17237	310	WARM CAL DATA 2 CH 1	17229
128	CH 2	17271	312	CH 2	17254
130	REFLECTOR POSITION 16	5758			
132	REFL POS 16 2ND LOOK	5760			
134	SCENE DATA BP 16 CH 1	17241			
136	CH 2	17274			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18371	22.89
264	FEED HORN	18168	23.71
266	RF MUX	18636	24.66
268	MIXER/IF AMPLIFIER CHANNEL 1	19124	25.51
270	MIXER/IF AMPLIFIER CHANNEL 2	19297	25.54
272	LOCAL OSCILLATOR CHANNEL 1	18847	25.19
274	LOCAL OSCILLATOR CHANNEL 2	19415	25.79
276	I553 INTERFACE	14190	29.55
278	SUB REFLECTOR	17925	23.06
280	DC/DC CONVERTER	20130	27.75
282	RF SHELF	18867	24.35
284	DETECTOR/PREAMP ASSEMBLY	19244	24.72
286	WARM LOAD CENTER	22911	23.27
288	WARM LOAD 2	23454	23.17
290	WARM LOAD 3	23055	23.20
292	WARM LOAD 4	22945	23.28
294	WARM LOAD 5	22929	23.27
296	WARM LOAD 6	23421	23.25
298	WARM LOAD 1	23280	23.23
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	YES
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ONE
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22174	4.92
	+15 VDC	21841	15.05
	-15 VDC	21862	-15.07
ANTENNA DRIVE	+5 VDC	22041	4.94
	+15 VDC	22003	14.99
	-15 VDC	21821	-15.05
MIXER/IF AMPLIFIER	+10 VDC	21688	9.94
LO CHANNEL 1	+10 VDC	21275	10.05
LO CHANNEL 2	+10 VDC	21389	10.02
QUIET BUS CURRENT		13464	610.95
NOISY BUS CURRENT		17781	68.99

PRT TEMPERATURES	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

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EOS  A2-04  E2.EXE;26 COLD CAL MODE        16-JUL-98  22:44:232 SCAN NUMBER    720
[ 5 ] SCIENCE DATA    ELEMENT 0000
[ 6 ] CONTROL/STATUS  ELEMENT   00
[ 7 ] ENGINEERING     ELEMENT   00
                                      COMMANDS
[ 9 ]  SCANNER A2 POWER =            ON     COLD CAL POSITION 1 =       NO  [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = NO       COLD CAL POSITION 2 =       YES [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO       COLD CAL POSITION 3 =       NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = YES      COLD CAL POSITION 4 =       NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO       RESET C&DH PROCESSOR            [ 18 ]
                                            GSE MODE                        [ 19 ]
ENGR OK   POWER        ON     CHECKSUM  IN BF3C CALC BF3C   SA28    563 SA29    563
                       SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL       [ 1 ] RETURN
 SELECT BUTTON 3
```

Cold Cal 2 [illegible]tic

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	2116
2		00100001	140	REFL POS 17 2ND LOOK	2116
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17244
4		01000101	144	CH 2	17256
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	2116
6		00000000	148	REFL POS 18 2ND LOOK	2116
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17241
8		00101000	152	CH 2	17262
10	REFLECTOR POSITION 1	2116	154	REFLECTOR POSITION 19	2116
12	REFL POS 1 2ND LOOK	2116	156	REFL POS 19 2ND LOOK	2116
14	SCENE DATA BP 1 CH 1	17236	158	SCENE DATA BP 19 CH 1	17241
16	CH 2	17255	160	CH 2	17250
18	REFLECTOR POSITION 2	2116	162	REFLECTOR POSITION 20	2116
20	REFL POS 2 2ND LOOK	2116	164	REFL POS 20 2ND LOOK	2116
22	SCENE DATA BP 2 CH 1	17241	166	SCENE DATA BP 20 CH 1	17238
24	CH 2	17253	168	CH 2	17258
26	REFLECTOR POSITION 3	2116	170	REFLECTOR POSITION 21	2116
28	REFL POS 3 2ND LOOK	2116	172	REFL POS 21 2ND LOOK	2116
30	SCENE DATA BP 3 CH 1	17239	174	SCENE DATA BP 21 CH 1	17237
32	CH 2	17257	176	CH 2	17254
34	REFLECTOR POSITION 4	2116	178	REFLECTOR POSITION 22	2116
36	REFL POS 4 2ND LOOK	2116	180	REFL POS 22 2ND LOOK	2116
38	SCENE DATA BP 4 CH 1	17239	182	SCENE DATA BP 22 CH 1	17242
40	CH 2	17259	184	CH 2	17256
42	REFLECTOR POSITION 5	2116	186	REFLECTOR POSITION 23	2116
44	REFL POS 5 2ND LOOK	2116	188	REFL POS 23 2ND LOOK	2116
46	SCENE DATA BP 5 CH 1	17245	190	SCENE DATA BP 23 CH 1	17234
48	CH 2	17260	192	CH 2	17251
50	REFLECTOR POSITION 6	2116	194	REFLECTOR POSITION 24	2116
52	REFL POS 6 2ND LOOK	2116	196	REFL POS 24 2ND LOOK	2116
54	SCENE DATA BP 6 CH 1	17241	198	SCENE DATA BP 24 CH 1	17244
56	CH 2	17259	200	CH 2	17258
58	REFLECTOR POSITION 7	2116	202	REFLECTOR POSITION 25	2116
60	REFL POS 7 2ND LOOK	2116	204	REFL POS 25 2ND LOOK	2116
62	SCENE DATA BP 7 CH 1	17242	206	SCENE DATA BP 25 CH 1	17239
64	CH 2	17256	208	CH 2	17254
66	REFLECTOR POSITION 8	2116	210	REFLECTOR POSITION 26	2116
68	REFL POS 8 2ND LOOK	2116	212	REFL POS 26 2ND LOOK	2116
70	SCENE DATA BP 8 CH 1	17239	214	SCENE DATA BP 26 CH 1	17236
72	CH 2	17261	216	CH 2	17253
74	REFLECTOR POSITION 9	2116	218	REFLECTOR POSITION 27	2116
76	REFL POS 9 2ND LOOK	2116	220	REFL POS 27 2ND LOOK	2116
78	SCENE DATA BP 9 CH 1	17243	222	SCENE DATA BP 27 CH 1	17243
80	CH 2	17257	224	CH 2	17255
82	REFLECTOR POSITION 10	2116	226	REFLECTOR POSITION 28	2116
84	REFL POS 10 2ND LOOK	2116	228	REFL POS 28 2ND LOOK	2116
86	SCENE DATA BP 10 CH 1	17239	230	SCENE DATA BP 28 CH 1	17240
88	CH 2	17254	232	CH 2	17258
90	REFLECTOR POSITION 11	2116	234	REFLECTOR POSITION 29	2116
92	REFL POS 11 2ND LOOK	2116	236	REFL POS 29 2ND LOOK	2116

ELEMENT	DESCRIPTION		VALUE
94	SCENE DATA BP 11	CH 1	17237
96		CH 2	17260
98	REFLECTOR POSITION 12		2116
100	REFL POS 12 2ND LOOK		2116
102	SCENE DATA BP 12	CH 1	17239
104		CH 2	17254
106	REFLECTOR POSITION 13		2116
108	REFL POS 13 2ND LOOK		2116
110	SCENE DATA BP 13	CH 1	17239
112		CH 2	17262
114	REFLECTOR POSITION 14		2116
116	REFL POS 14 2ND LOOK		2116
118	SCENE DATA BP 14	CH 1	17243
120		CH 2	17258
122	REFLECTOR POSITION 15		2116
124	REFL POS 15 2ND LOOK		2116
126	SCENE DATA BP 15	CH 1	17242
128		CH 2	17252
130	REFLECTOR POSITION 16		2116
132	REFL POS 16 2ND LOOK		2116
134	SCENE DATA BP 16	CH 1	17245
136		CH 2	17258

ELEMENT	DESCRIPTION		VALUE
238	SCENE DATA BP 29	CH 1	17238
240		CH 2	17253
242	REFLECTOR POSITION 30		2116
244	REFL POS 30 2ND LOOK		2116
246	SCENE DATA BP 30	CH 1	17242
248		CH 2	17256
250	REFLECTOR COLD CAL POS		0E
252	REFL COLD CAL 2ND LOOK		0E
254	COLD CAL DATA 1	CH 1	0
256		CH 2	0
258	COLD CAL DATA 2	CH 1	0
260		CH 2	0
302	REFLECTOR WARM CAL POS		0E
304	REFL WARM CAL 2ND LOOK		0E
306	WARM CAL DATA 1	CH 1	0
308		CH 2	0
310	WARM CAL DATA 2	CH 1	0
312		CH 2	0

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18395	22.94
264	FEED HORN	18197	23.76
266	RF MUX	18671	24.73
268	MIXER/IF AMPLIFIER CHANNEL 1	19158	25.57
270	MIXER/IF AMPLIFIER CHANNEL 2	19332	25.60
272	LOCAL OSCILLATOR CHANNEL 1	18881	25.25
274	LOCAL OSCILLATOR CHANNEL 2	19450	25.86
276	I553 INTERFACE	14215	29.60
278	SUB REFLECTOR	17954	23.12
280	DC/DC CONVERTER	20161	27.80
282	RF SHELF	18899	24.41
284	DETECTOR/PREAMP ASSEMBLY	19277	24.78
286	WARM LOAD CENTER	22928	23.30
288	WARM LOAD 2	23471	23.21
290	WARM LOAD 3	23070	23.22
292	WARM LOAD 4	22962	23.31
294	WARM LOAD 5	22944	23.30
296	WARM LOAD 6	23439	23.29
298	WARM LOAD 1	23293	23.25
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	NO
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	YES
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ONE
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22190	4.92
	+15 VDC	21840	15.05
	-15 VDC	21857	-15.07
ANTENNA DRIVE	+5 VDC	22108	4.94
	+15 VDC	22027	14.99
	-15 VDC	21846	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21688	9.94
LO CHANNEL 1	+10 VDC	21276	10.05
LO CHANNEL 2	+10 VDC	21390	10.02
QUIET BUS CURRENT		13848	610.51
NOISY BUS CURRENT		4840	94.72

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

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EOS  A2-04  E2.EXE;26 FULL SCAN MODE     16-JUL-98  22:52:402 SCAN NUMBER   782
[ 5 ] SCIENCE DATA      ELEMENT 0000
[ 6 ] CONTROL/STATUS    ELEMENT    00
[ 7 ] ENGINEERING       ELEMENT    00

                                      COMMANDS
[ 9 ]  SCANNER A2 POWER =            ON     COLD CAL POSITION 1 =        NO  [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = YES     COLD CAL POSITION 2 =        NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO      COLD CAL POSITION 3 =        YES [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = NO      COLD CAL POSITION 4 =        NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO      RESET C&DH PROCESSOR             [ 18 ]
                                           GSE MODE                         [ 19 ]

ENGR OK   POWER         ON    CHECKSUM  IN B203 CALC B203    SA28    625 SA29    625
                        SCREEN ONLY [ 2 ]  PRINT   [ 3 ] FULL        [ 1 ] RETURN
 SELECT BUTTON 3
```

Cold Cal 3

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	5604
2		00100010	140	REFL POS 17 2ND LOOK	5609
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17235
4		01011101	144	CH 2	17258
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	5452
6		00000000	148	REFL POS 18 2ND LOOK	5456
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17229
8		01000010	152	CH 2	17250
10	REFLECTOR POSITION 1	8034	154	REFLECTOR POSITION 19	5301
12	REFL POS 1 2ND LOOK	8034	156	REFL POS 19 2ND LOOK	5304
14	SCENE DATA BP 1 CH 1	17221	158	SCENE DATA BP 19 CH 1	17232
16	CH 2	17258	160	CH 2	17253
18	REFLECTOR POSITION 2	7881	162	REFLECTOR POSITION 20	5151
20	REFL POS 2 2ND LOOK	7882	164	REFL POS 20 2ND LOOK	5153
22	SCENE DATA BP 2 CH 1	17232	166	SCENE DATA BP 20 CH 1	17234
24	CH 2	17248	168	CH 2	17253
26	REFLECTOR POSITION 3	7730	170	REFLECTOR POSITION 21	5000
28	REFL POS 3 2ND LOOK	7731	172	REFL POS 21 2ND LOOK	5002
30	SCENE DATA BP 3 CH 1	17231	174	SCENE DATA BP 21 CH 1	17228
32	CH 2	17261	176	CH 2	17253
34	REFLECTOR POSITION 4	7579	178	REFLECTOR POSITION 22	4848
36	REFL POS 4 2ND LOOK	7581	180	REFL POS 22 2ND LOOK	4851
38	SCENE DATA BP 4 CH 1	17228	182	SCENE DATA BP 22 CH 1	17232
40	CH 2	17251	184	CH 2	17250
42	REFLECTOR POSITION 5	7427	186	REFLECTOR POSITION 23	4697
44	REFL POS 5 2ND LOOK	7428	188	REFL POS 23 2ND LOOK	4699
46	SCENE DATA BP 5 CH 1	17230	190	SCENE DATA BP 23 CH 1	17230
48	CH 2	17247	192	CH 2	17249
50	REFLECTOR POSITION 6	7275	194	REFLECTOR POSITION 24	4545
52	REFL POS 6 2ND LOOK	7276	196	REFL POS 24 2ND LOOK	4547
54	SCENE DATA BP 6 CH 1	17233	198	SCENE DATA BP 24 CH 1	17229
56	CH 2	17262	200	CH 2	17248
58	REFLECTOR POSITION 7	7123	202	REFLECTOR POSITION 25	4394
60	REFL POS 7 2ND LOOK	7125	204	REFL POS 25 2ND LOOK	4394
62	SCENE DATA BP 7 CH 1	17229	206	SCENE DATA BP 25 CH 1	17233
64	CH 2	17250	208	CH 2	17246
66	REFLECTOR POSITION 8	6970	210	REFLECTOR POSITION 26	4238
68	REFL POS 8 2ND LOOK	6974	212	REFL POS 26 2ND LOOK	4243
70	SCENE DATA BP 8 CH 1	17232	214	SCENE DATA BP 26 CH 1	17231
72	CH 2	17253	216	CH 2	17251
74	REFLECTOR POSITION 9	6817	218	REFLECTOR POSITION 27	4089
76	REFL POS 9 2ND LOOK	6821	220	REFL POS 27 2ND LOOK	4091
78	SCENE DATA BP 9 CH 1	17235	222	SCENE DATA BP 27 CH 1	17231
80	CH 2	17253	224	CH 2	17259
82	REFLECTOR POSITION 10	6665	226	REFLECTOR POSITION 28	3936
84	REFL POS 10 2ND LOOK	6670	228	REFL POS 28 2ND LOOK	3939
86	SCENE DATA BP 10 CH 1	17230	230	SCENE DATA BP 28 CH 1	17230
88	CH 2	17256	232	CH 2	17254
90	REFLECTOR POSITION 11	6517	234	REFLECTOR POSITION 29	3787
92	REFL POS 11 2ND LOOK	6519	236	REFL POS 29 2ND LOOK	3789

ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17234
96	CH 2	17249
98	REFLECTOR POSITION 12	6365
100	REFL POS 12 2ND LOOK	6366
102	SCENE DATA BP 12 CH 1	17234
104	CH 2	17249
106	REFLECTOR POSITION 13	6213
108	REFL POS 13 2ND LOOK	6216
110	SCENE DATA BP 13 CH 1	17233
112	CH 2	17254
114	REFLECTOR POSITION 14	6062
116	REFL POS 14 2ND LOOK	6065
118	SCENE DATA BP 14 CH 1	17237
120	CH 2	17256
122	REFLECTOR POSITION 15	5910
124	REFL POS 15 2ND LOOK	5912
126	SCENE DATA BP 15 CH 1	17231
128	CH 2	17272
130	REFLECTOR POSITION 16	5756
132	REFL POS 16 2ND LOOK	5760
134	SCENE DATA BP 16 CH 1	17229
136	CH 2	17270

ELEMENT	DESCRIPTION	VALUE
238	SCENE DATA BP 29 CH 1	17226
240	CH 2	17250
242	REFLECTOR POSITION 30	3635
244	REFL POS 30 2ND LOOK	3636
246	SCENE DATA BP 30 CH 1	17231
248	CH 2	17258
250	REFLECTOR COLD CAL POS	2195
252	REFL COLD CAL 2ND LOOK	2195
254	COLD CAL DATA 1 CH 1	17233
256	CH 2	17250
258	COLD CAL DATA 2 CH 1	17234
260	CH 2	17244
302	REFLECTOR WARM CAL POS	14027
304	REFL WARM CAL 2ND LOOK	14027
306	WARM CAL DATA 1 CH 1	17213
308	CH 2	17244
310	WARM CAL DATA 2 CH 1	17215
312	CH 2	17240

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18432	23.00
264	FEED HORN	18245	23.85
266	RF MUX	18728	24.84
268	MIXER/IF AMPLIFIER CHANNEL 1	19220	25.69
270	MIXER/IF AMPLIFIER CHANNEL 2	19392	25.72
272	LOCAL OSCILLATOR CHANNEL 1	18941	25.36
274	LOCAL OSCILLATOR CHANNEL 2	19511	25.97
276	1553 INTERFACE	14259	29.68
278	SUB REFLECTOR	17981	23.17
280	DC/DC CONVERTER	20218	27.91
282	RF SHELF	18953	24.51
284	DETECTOR/PREAMP ASSEMBLY	19335	24.89
286	WARM LOAD CENTER	22962	23.37
288	WARM LOAD 2	23503	23.27
290	WARM LOAD 3	23109	23.30
292	WARM LOAD 4	22996	23.38
294	WARM LOAD 5	22982	23.38
296	WARM LOAD 6	23476	23.36
298	WARM LOAD 1	23328	23.32
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	YES
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ONE
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22112	4.92
	+15 VDC	21840	15.05
	-15 VDC	21863	-15.07
ANTENNA DRIVE	+5 VDC	22044	4.94
	+15 VDC	21985	14.99
	-15 VDC	21818	-15.07
MIXER/IF AMPLIFIER	+10 VDC	21690	9.94
LO CHANNEL 1	+10 VDC	21276	10.05
LO CHANNEL 2	+10 VDC	21389	10.02
QUIET BUS CURRENT		13413	618.42
NOISY BUS CURRENT		9570	10.62

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		

ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

```
EOS  A2-04  E2.EXE;26 COLD CAL MODE       16-JUL-98  23:01:512 SCAN NUMBER   851
[ 5 ] SCIENCE DATA      ELEMENT 0000
[ 6 ] CONTROL/STATUS    ELEMENT   00
[ 7 ] ENGINEERING       ELEMENT   00

                                        COMMANDS
[ 9 ]  SCANNER A2 POWER =              ON     COLD CAL POSITION 1 =       NO  [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = NO        COLD CAL POSITION 2 =       NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO        COLD CAL POSITION 3 =       YES [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = YES       COLD CAL POSITION 4 =       NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO        RESET C&DH PROCESSOR            [ 18 ]
                                             GSE MODE                        [ 19 ]

ENGR OK    POWER         ON     CHECKSUM  IN     9 CALC     9    SA28     694 SA29    694
                         SCREEN ONLY [ 2 ]   PRINT   [ 3 ]  FULL          [ 1 ] RETURN
 SELECT BUTTON 3
```

Cold Cal 3 station

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	2198
2		00100001	140	REFL POS 17 2ND LOOK	2198
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17228
4		01000101	144	CH 2	17250
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	2198
6		00000000	148	REFL POS 18 2ND LOOK	2198
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17229
8		01001000	152	CH 2	17243
10	REFLECTOR POSITION 1	2198	154	REFLECTOR POSITION 19	2198
12	REFL POS 1 2ND LOOK	2198	156	REFL POS 19 2ND LOOK	2198
14	SCENE DATA BP 1 CH 1	17222	158	SCENE DATA BP 19 CH 1	17225
16	CH 2	17240	160	CH 2	17240
18	REFLECTOR POSITION 2	2198	162	REFLECTOR POSITION 20	2198
20	REFL POS 2 2ND LOOK	2198	164	REFL POS 20 2ND LOOK	2198
22	SCENE DATA BP 2 CH 1	17233	166	SCENE DATA BP 20 CH 1	17225
24	CH 2	17247	168	CH 2	17247
26	REFLECTOR POSITION 3	2198	170	REFLECTOR POSITION 21	2198
28	REFL POS 3 2ND LOOK	2198	172	REFL POS 21 2ND LOOK	2198
30	SCENE DATA BP 3 CH 1	17230	174	SCENE DATA BP 21 CH 1	17229
32	CH 2	17240	176	CH 2	17249
34	REFLECTOR POSITION 4	2198	178	REFLECTOR POSITION 22	2198
36	REFL POS 4 2ND LOOK	2198	180	REFL POS 22 2ND LOOK	2198
38	SCENE DATA BP 4 CH 1	17232	182	SCENE DATA BP 22 CH 1	17232
40	CH 2	17249	184	CH 2	17247
42	REFLECTOR POSITION 5	2198	186	REFLECTOR POSITION 23	2198
44	REFL POS 5 2ND LOOK	2198	188	REFL POS 23 2ND LOOK	2198
46	SCENE DATA BP 5 CH 1	17226	190	SCENE DATA BP 23 CH 1	17230
48	CH 2	17251	192	CH 2	17242
50	REFLECTOR POSITION 6	2198	194	REFLECTOR POSITION 24	2198
52	REFL POS 6 2ND LOOK	2198	196	REFL POS 24 2ND LOOK	2198
54	SCENE DATA BP 6 CH 1	17229	198	SCENE DATA BP 24 CH 1	17231
56	CH 2	17249	200	CH 2	17248
58	REFLECTOR POSITION 7	2198	202	REFLECTOR POSITION 25	2198
60	REFL POS 7 2ND LOOK	2198	204	REFL POS 25 2ND LOOK	2198
62	SCENE DATA BP 7 CH 1	17229	206	SCENE DATA BP 25 CH 1	17229
64	CH 2	17244	208	CH 2	17246
66	REFLECTOR POSITION 8	2198	210	REFLECTOR POSITION 26	2198
68	REFL POS 8 2ND LOOK	2198	212	REFL POS 26 2ND LOOK	2198
70	SCENE DATA BP 8 CH 1	17229	214	SCENE DATA BP 26 CH 1	17226
72	CH 2	17247	216	CH 2	17245
74	REFLECTOR POSITION 9	2198	218	REFLECTOR POSITION 27	2198
76	REFL POS 9 2ND LOOK	2198	220	REFL POS 27 2ND LOOK	2198
78	SCENE DATA BP 9 CH 1	17228	222	SCENE DATA BP 27 CH 1	17225
80	CH 2	17246	224	CH 2	17245
82	REFLECTOR POSITION 10	2198	226	REFLECTOR POSITION 28	2198
84	REFL POS 10 2ND LOOK	2198	228	REFL POS 28 2ND LOOK	2198
86	SCENE DATA BP 10 CH 1	17232	230	SCENE DATA BP 28 CH 1	17228
88	CH 2	17245	232	CH 2	17247
90	REFLECTOR POSITION 11	2198	234	REFLECTOR POSITION 29	2198
92	REFL POS 11 2ND LOOK	2198	236	REFL POS 29 2ND LOOK	2198

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17226	238	SCENE DATA BP 29 CH 1	17226
96	CH 2	17245	240	CH 2	17245
98	REFLECTOR POSITION 12	2198	242	REFLECTOR POSITION 30	2198
100	REFL POS 12 2ND LOOK	2198	244	REFL POS 30 2ND LOOK	2198
102	SCENE DATA BP 12 CH 1	17223	246	SCENE DATA BP 30 CH 1	17228
104	CH 2	17244	248	CH 2	17243
106	REFLECTOR POSITION 13	2198	250	REFLECTOR COLD CAL POS	0E
108	REFL POS 13 2ND LOOK	2198	252	REFL COLD CAL 2ND LOOK	0E
110	SCENE DATA BP 13 CH 1	17231	254	COLD CAL DATA 1 CH 1	0
112	CH 2	17246	256	CH 2	0
114	REFLECTOR POSITION 14	2198	258	COLD CAL DATA 2 CH 1	0
116	REFL POS 14 2ND LOOK	2198	260	CH 2	0
118	SCENE DATA BP 14 CH 1	17228	302	REFLECTOR WARM CAL POS	0E
120	CH 2	17246	304	REFL WARM CAL 2ND LOOK	0E
122	REFLECTOR POSITION 15	2198	306	WARM CAL DATA 1 CH 1	0
124	REFL POS 15 2ND LOOK	2198	308	CH 2	0
126	SCENE DATA BP 15 CH 1	17233	310	WARM CAL DATA 2 CH 1	0
128	CH 2	17245	312	CH 2	0
130	REFLECTOR POSITION 16	2198			
132	REFL POS 16 2ND LOOK	2198			
134	SCENE DATA BP 16 CH 1	17230			
136	CH 2	17249			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18488	23.11
264	FEED HORN	18301	23.96
266	RF MUX	18786	24.95
268	MIXER/IF AMPLIFIER CHANNEL 1	19280	25.81
270	MIXER/IF AMPLIFIER CHANNEL 2	19459	25.84
272	LOCAL OSCILLATOR CHANNEL 1	18999	25.47
274	LOCAL OSCILLATOR CHANNEL 2	19574	26.09
276	I553 INTERFACE	14310	29.78
278	SUB REFLECTOR	18036	23.27
280	DC/DC CONVERTER	20260	27.99
282	RF SHELF	19006	24.61
284	DETECTOR/PREAMP ASSEMBLY	19393	25.00
286	WARM LOAD CENTER	23002	23.45
288	WARM LOAD 2	23536	23.34
290	WARM LOAD 3	23142	23.37
292	WARM LOAD 4	23031	23.45
294	WARM LOAD 5	23016	23.44
296	WARM LOAD 6	23513	23.44
298	WARM LOAD 1	23368	23.40
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	NO
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	YES
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ONE
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22171	4.93
	+15 VDC	21840	15.05
	-15 VDC	21858	-15.07
ANTENNA DRIVE	+5 VDC	22102	4.94
	+15 VDC	22018	14.99
	-15 VDC	21843	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21690	9.94
LO CHANNEL 1	+10 VDC	21275	10.05
LO CHANNEL 2	+10 VDC	21391	10.02
QUIET BUS CURRENT		13637	608.21
NOISY BUS CURRENT		2330	81.30

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

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EOS   A2-04   E2.EXE;26  FULL SCAN MODE      16-JUL-98   23:12:322 SCAN NUMBER    931
[ 5 ] SCIENCE DATA       ELEMENT 0000
[ 6 ] CONTROL/STATUS     ELEMENT    00
[ 7 ] ENGINEERING        ELEMENT    00

                                        COMMANDS
[ 9 ]  SCANNER A2 POWER =              ON    COLD CAL POSITION 1 =        NO  [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = YES       COLD CAL POSITION 2 =        NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO        COLD CAL POSITION 3 =        NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = NO        COLD CAL POSITION 4 =        YES [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO        RESET C&DH PROCESSOR             [ 18 ]
                                             GSE MODE                         [ 19 ]

ENGR OK    POWER          ON     CHECKSUM  IN   202 CALC   202    SA28     774 SA29     774
                          SCREEN ONLY [ 2 ]  PRINT    [ 3 ] FULL           [ 1 ] RETURN
 SELECT BUTTON 3
```

Cold Cal 4 Dunman

EOS A2_04 E2.EXE;26 SCIENCE DATA 16-JUL-98 23:12:35 PAGE 1

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	5604
2		00100010	140	REFL POS 17 2ND LOOK	5609
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17224
4		01011101	144	CH 2	17249
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	5452
6		00000000	148	REFL POS 18 2ND LOOK	5457
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17220
8		01100010	152	CH 2	17243
10	REFLECTOR POSITION 1	8033	154	REFLECTOR POSITION 19	5300
12	REFL POS 1 2ND LOOK	8033	156	REFL POS 19 2ND LOOK	5305
14	SCENE DATA BP 1 CH 1	17220	158	SCENE DATA BP 19 CH 1	17220
16	CH 2	17253	160	CH 2	17251
18	REFLECTOR POSITION 2	7881	162	REFLECTOR POSITION 20	5151
20	REFL POS 2 2ND LOOK	7882	164	REFL POS 20 2ND LOOK	5153
22	SCENE DATA BP 2 CH 1	17225	166	SCENE DATA BP 20 CH 1	17225
24	CH 2	17240	168	CH 2	17252
26	REFLECTOR POSITION 3	7730	170	REFLECTOR POSITION 21	5000
28	REFL POS 3 2ND LOOK	7730	172	REFL POS 21 2ND LOOK	5002
30	SCENE DATA BP 3 CH 1	17223	174	SCENE DATA BP 21 CH 1	17220
32	CH 2	17258	176	CH 2	17252
34	REFLECTOR POSITION 4	7580	178	REFLECTOR POSITION 22	4849
36	REFL POS 4 2ND LOOK	7581	180	REFL POS 22 2ND LOOK	4851
38	SCENE DATA BP 4 CH 1	17218	182	SCENE DATA BP 22 CH 1	17226
40	CH 2	17249	184	CH 2	17250
42	REFLECTOR POSITION 5	7427	186	REFLECTOR POSITION 23	4697
44	REFL POS 5 2ND LOOK	7428	188	REFL POS 23 2ND LOOK	4699
46	SCENE DATA BP 5 CH 1	17219	190	SCENE DATA BP 23 CH 1	17221
48	CH 2	17240	192	CH 2	17252
50	REFLECTOR POSITION 6	7275	194	REFLECTOR POSITION 24	4545
52	REFL POS 6 2ND LOOK	7276	196	REFL POS 24 2ND LOOK	4547
54	SCENE DATA BP 6 CH 1	17221	198	SCENE DATA BP 24 CH 1	17219
56	CH 2	17255	200	CH 2	17242
58	REFLECTOR POSITION 7	7123	202	REFLECTOR POSITION 25	4394
60	REFL POS 7 2ND LOOK	7126	204	REFL POS 25 2ND LOOK	4395
62	SCENE DATA BP 7 CH 1	17223	206	SCENE DATA BP 25 CH 1	17221
64	CH 2	17245	208	CH 2	17247
66	REFLECTOR POSITION 8	6969	210	REFLECTOR POSITION 26	4239
68	REFL POS 8 2ND LOOK	6974	212	REFL POS 26 2ND LOOK	4243
70	SCENE DATA BP 8 CH 1	17220	214	SCENE DATA BP 26 CH 1	17215
72	CH 2	17244	216	CH 2	17251
74	REFLECTOR POSITION 9	6816	218	REFLECTOR POSITION 27	4089
76	REFL POS 9 2ND LOOK	6821	220	REFL POS 27 2ND LOOK	4092
78	SCENE DATA BP 9 CH 1	17222	222	SCENE DATA BP 27 CH 1	17218
80	CH 2	17248	224	CH 2	17241
82	REFLECTOR POSITION 10	6665	226	REFLECTOR POSITION 28	3936
84	REFL POS 10 2ND LOOK	6670	228	REFL POS 28 2ND LOOK	3939
86	SCENE DATA BP 10 CH 1	17219	230	SCENE DATA BP 28 CH 1	17221
88	CH 2	17248	232	CH 2	17245
90	REFLECTOR POSITION 11	6517	234	REFLECTOR POSITION 29	3787
92	REFL POS 11 2ND LOOK	6519	236	REFL POS 29 2ND LOOK	3789

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17221	238	SCENE DATA BP 29 CH 1	17217
96	CH 2	17253	240	CH 2	17243
98	REFLECTOR POSITION 12	6365	242	REFLECTOR POSITION 30	3635
100	REFL POS 12 2ND LOOK	6367	244	REFL POS 30 2ND LOOK	3637
102	SCENE DATA BP 12 CH 1	17219	246	SCENE DATA BP 30 CH 1	17218
104	CH 2	17253	248	CH 2	17244
106	REFLECTOR POSITION 13	6213	250	REFLECTOR COLD CAL POS	2347
108	REFL POS 13 2ND LOOK	6216	252	REFL COLD CAL 2ND LOOK	2346
110	SCENE DATA BP 13 CH 1	17224	254	COLD CAL DATA 1 CH 1	17220
112	CH 2	17247	256	CH 2	17251
114	REFLECTOR POSITION 14	6062	258	COLD CAL DATA 2 CH 1	17218
116	REFL POS 14 2ND LOOK	6065	260	CH 2	17245
118	SCENE DATA BP 14 CH 1	17223	302	REFLECTOR WARM CAL POS	14026
120	CH 2	17255	304	REFL WARM CAL 2ND LOOK	14027
122	REFLECTOR POSITION 15	5910	306	WARM CAL DATA 1 CH 1	17206
124	REFL POS 15 2ND LOOK	5912	308	CH 2	17248
126	SCENE DATA BP 15 CH 1	17222	310	WARM CAL DATA 2 CH 1	17205
128	CH 2	17269	312	CH 2	17243
130	REFLECTOR POSITION 16	5758			
132	REFL POS 16 2ND LOOK	5760			
134	SCENE DATA BP 16 CH 1	17220			
136	CH 2	17266			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18514	23.15
264	FEED HORN	18336	24.03
266	RF MUX	18842	25.06
268	MIXER/IF AMPLIFIER CHANNEL 1	19341	25.92
270	MIXER/IF AMPLIFIER CHANNEL 2	19510	25.94
272	LOCAL OSCILLATOR CHANNEL 1	19062	25.59
274	LOCAL OSCILLATOR CHANNEL 2	19633	26.21
276	I553 INTERFACE	14356	29.87
278	SUB REFLECTOR	18060	23.32
280	DC/DC CONVERTER	20307	28.08
282	RF SHELF	19062	24.72
284	DETECTOR/PREAMP ASSEMBLY	19453	25.11
286	WARM LOAD CENTER	23043	23.53
288	WARM LOAD 2	23582	23.43
290	WARM LOAD 3	23187	23.46
292	WARM LOAD 4	23077	23.54
294	WARM LOAD 5	23065	23.54
296	WARM LOAD 6	23555	23.52
298	WARM LOAD 1	23413	23.49
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	YES
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ONE
COLD CAL POSITION MSB	ONE
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22159	4.92
	+15 VDC	21842	15.05
	-15 VDC	21860	-15.07
ANTENNA DRIVE	+5 VDC	22107	4.94
	+15 VDC	22028	14.99
	-15 VDC	21851	-15.05
MIXER/IF AMPLIFIER	+10 VDC	21689	9.94
LO CHANNEL 1	+10 VDC	21276	10.05
LO CHANNEL 2	+10 VDC	21393	10.02
QUIET BUS CURRENT		13416	610.27
NOISY BUS CURRENT		17564	59.79

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

```
EOS  A2-04  E2.EXE;26 COLD CAL MODE      16-JUL-98  23:16:232 SCAN NUMBER   960
[ 5 ] SCIENCE DATA    ELEMENT 0000
[ 6 ] CONTROL/STATUS  ELEMENT   00
[ 7 ] ENGINEERING     ELEMENT   00

                                        COMMANDS
[ 9 ]  SCANNER A2 POWER =              ON    COLD CAL POSITION 1 =       NO  [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = NO        COLD CAL POSITION 2 =       NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO        COLD CAL POSITION 3 =       NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = YES       COLD CAL POSITION 4 =      YES  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = NO        RESET C&DH PROCESSOR            [ 18 ]
                                             GSE MODE                        [ 19 ]

ENGR OK   POWER        ON    CHECKSUM  IN 8636 CALC 8636   SA28    803 SA29    803
                       SCREEN ONLY [ 2 ]   PRINT  [ 3 ] FULL         [ 1 ] RETURN
 SELECT BUTTON 3
```

Cold Cal 4 St :ic

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	2349
2		00100001	140	REFL POS 17 2ND LOOK	2349
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17220
4		01000101	144	CH 2	17252
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	2349
6		00000000	148	REFL POS 18 2ND LOOK	2349
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17223
8		01101000	152	CH 2	17248
10	REFLECTOR POSITION 1	2349	154	REFLECTOR POSITION 19	2349
12	REFL POS 1 2ND LOOK	2349	156	REFL POS 19 2ND LOOK	2349
14	SCENE DATA BP 1 CH 1	17209	158	SCENE DATA BP 19 CH 1	17221
16	CH 2	17244	160	CH 2	17251
18	REFLECTOR POSITION 2	2349	162	REFLECTOR POSITION 20	2349
20	REFL POS 2 2ND LOOK	2349	164	REFL POS 20 2ND LOOK	2349
22	SCENE DATA BP 2 CH 1	17219	166	SCENE DATA BP 20 CH 1	17217
24	CH 2	17246	168	CH 2	17249
26	REFLECTOR POSITION 3	2349	170	REFLECTOR POSITION 21	2349
28	REFL POS 3 2ND LOOK	2349	172	REFL POS 21 2ND LOOK	2349
30	SCENE DATA BP 3 CH 1	17217	174	SCENE DATA BP 21 CH 1	17220
32	CH 2	17244	176	CH 2	17249
34	REFLECTOR POSITION 4	2349	178	REFLECTOR POSITION 22	2349
36	REFL POS 4 2ND LOOK	2349	180	REFL POS 22 2ND LOOK	2349
38	SCENE DATA BP 4 CH 1	17219	182	SCENE DATA BP 22 CH 1	17217
40	CH 2	17250	184	CH 2	17243
42	REFLECTOR POSITION 5	2349	186	REFLECTOR POSITION 23	2349
44	REFL POS 5 2ND LOOK	2349	188	REFL POS 23 2ND LOOK	2349
46	SCENE DATA BP 5 CH 1	17218	190	SCENE DATA BP 23 CH 1	17217
48	CH 2	17247	192	CH 2	17246
50	REFLECTOR POSITION 6	2349	194	REFLECTOR POSITION 24	2349
52	REFL POS 6 2ND LOOK	2349	196	REFL POS 24 2ND LOOK	2349
54	SCENE DATA BP 6 CH 1	17218	198	SCENE DATA BP 24 CH 1	17216
56	CH 2	17245	200	CH 2	17252
58	REFLECTOR POSITION 7	2349	202	REFLECTOR POSITION 25	2349
60	REFL POS 7 2ND LOOK	2349	204	REFL POS 25 2ND LOOK	2349
62	SCENE DATA BP 7 CH 1	17218	206	SCENE DATA BP 25 CH 1	17219
64	CH 2	17252	208	CH 2	17241
66	REFLECTOR POSITION 8	2349	210	REFLECTOR POSITION 26	2349
68	REFL POS 8 2ND LOOK	2349	212	REFL POS 26 2ND LOOK	2349
70	SCENE DATA BP 8 CH 1	17221	214	SCENE DATA BP 26 CH 1	17216
72	CH 2	17249	216	CH 2	17251
74	REFLECTOR POSITION 9	2349	218	REFLECTOR POSITION 27	2349
76	REFL POS 9 2ND LOOK	2349	220	REFL POS 27 2ND LOOK	2349
78	SCENE DATA BP 9 CH 1	17214	222	SCENE DATA BP 27 CH 1	17216
80	CH 2	17249	224	CH 2	17244
82	REFLECTOR POSITION 10	2349	226	REFLECTOR POSITION 28	2349
84	REFL POS 10 2ND LOOK	2349	228	REFL POS 28 2ND LOOK	2349
86	SCENE DATA BP 10 CH 1	17217	230	SCENE DATA BP 28 CH 1	17221
88	CH 2	17241	232	CH 2	17252
90	REFLECTOR POSITION 11	2349	234	REFLECTOR POSITION 29	2349
92	REFL POS 11 2ND LOOK	2349	236	REFL POS 29 2ND LOOK	2349

ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17219
96	CH 2	17250
98	REFLECTOR POSITION 12	2349
100	REFL POS 12 2ND LOOK	2349
102	SCENE DATA BP 12 CH 1	17220
104	CH 2	17252
106	REFLECTOR POSITION 13	2349
108	REFL POS 13 2ND LOOK	2349
110	SCENE DATA BP 13 CH 1	17215
112	CH 2	17249
114	REFLECTOR POSITION 14	2349
116	REFL POS 14 2ND LOOK	2349
118	SCENE DATA BP 14 CH 1	17222
120	CH 2	17249
122	REFLECTOR POSITION 15	2349
124	REFL POS 15 2ND LOOK	2349
126	SCENE DATA BP 15 CH 1	17223
128	CH 2	17247
130	REFLECTOR POSITION 16	2349
132	REFL POS 16 2ND LOOK	2349
134	SCENE DATA BP 16 CH 1	17215
136	CH 2	17245

ELEMENT	DESCRIPTION	VALUE
238	SCENE DATA BP 29 CH 1	17224
240	CH 2	17254
242	REFLECTOR POSITION 30	2349
244	REFL POS 30 2ND LOOK	2349
246	SCENE DATA BP 30 CH 1	17219
248	CH 2	17249
250	REFLECTOR COLD CAL POS	0E
252	REFL COLD CAL 2ND LOOK	0E
254	COLD CAL DATA 1 CH 1	0
256	CH 2	0
258	COLD CAL DATA 2 CH 1	0
260	CH 2	0
302	REFLECTOR WARM CAL POS	0E
304	REFL WARM CAL 2ND LOOK	0E
306	WARM CAL DATA 1 CH 1	0
308	CH 2	0
310	WARM CAL DATA 2 CH 1	0
312	CH 2	0

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18533	23.19
264	FEED HORN	18349	24.06
266	RF MUX	18859	25.09
268	MIXER/IF AMPLIFIER CHANNEL 1	19358	25.95
270	MIXER/IF AMPLIFIER CHANNEL 2	19532	25.98
272	LOCAL OSCILLATOR CHANNEL 1	19081	25.63
274	LOCAL OSCILLATOR CHANNEL 2	19653	26.24
276	I553 INTERFACE	14372	29.90
278	SUB REFLECTOR	18076	23.35
280	DC/DC CONVERTER	20321	28.11
282	RF SHELF	19079	24.75
284	DETECTOR/PREAMP ASSEMBLY	19472	25.15
286	WARM LOAD CENTER	23057	23.56
288	WARM LOAD 2	23596	23.46
290	WARM LOAD 3	23203	23.49
292	WARM LOAD 4	23090	23.57
294	WARM LOAD 5	23076	23.56
296	WARM LOAD 6	23571	23.55
298	WARM LOAD 1	23425	23.51
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	NO
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	YES
ANTENNA IN NADIR MODE	NO
COLD CAL POSITION LSB	ONE
COLD CAL POSITION MSB	ONE
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22164	4.92
	+15 VDC	21842	15.05
	-15 VDC	21858	-15.07
ANTENNA DRIVE	+5 VDC	22097	4.94
	+15 VDC	22060	14.99
	-15 VDC	21887	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21690	9.94
LO CHANNEL 1	+10 VDC	21276	10.05
LO CHANNEL 2	+10 VDC	21391	10.02
QUIET BUS CURRENT		13571	609.02
NOISY BUS CURRENT		332	48.50

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

TEST DATA SHEET NO. 12 (Sheet 1 of 2)
Science and Engineering Data Test (Nadir Mode) (Paragraph 3.3.5.3.4)

Step	Instrument Status	(Y)es / (N)o
1	Nadir Mode command received?	Y
2	ENGR OK message seen?	Y
3	Reflector positioned at nadir position?	Y

Yes = Pass No = Fail

Step	Element	Description	Measured Value* (Binary)	Required Value (Binary)	(P)ass/(F)ail
4a	1-2	Packet ID		0000100100100001	P
4b	3-4	Packet Length		0000000101000101	P
4c	5-6	Unit Serial Number		0000010000000000	P
4d	7-8	Instrument Mode/ Status		1000100000010000	P

RADIOMETER SCENE DATA			
Step	Description	Required Counts	(P)ass/(F)ail
4f	Review All Scene Data	12500-20500	P

QC 223 6-4-98

ENG 224

PRT TEMPERATURE DATA				
Step	Element	Description	Required	(P)ass/(F)ail
4g	262-298**	Review All PRT Data	10-40 degrees C	P
4g	300	Temperature Sensor Reference	23244-26317 counts	P

STATUS				
Step	Description	Status*	Required Status	(P)ass/(F)ail
4h	Antenna in Full Scan Mode		NO	P
	Antenna in Warm Cal Mode		NO	
	Antenna in Cold Cal Mode		NO	
	Antenna in Nadir Mode		YES	
	Cold Cal Position LSB		ZERO	
	Cold Cal Position MSB		ZERO	
	A2 Scanner Power		ON	
	ADC Latchup Flag		ONE	P

QC 223
6-4-98
ENG 224

* Rewriting printout data on this data sheet is optional.
~~** Except for element 276 >40°C.~~

EOS/AMSU-A1 System P/N 1356008 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

Ken Shaw 7/17/98
Test Systems Engineer JUL 17 1998

QC 2377 9/24/98
Customer Representative Date

QC 197 Quality Control Date

SHEET 86 OF ____
ECR NO. 1826

TEST DATA SHEET NO. 12 (sheet 2 of 2)
Science and Engineering Data Test (Nadir Mode) (Paragraph 3.3.5.3.4)

A2 REFLECTOR POSITIONS (Step 4e)			
Beam Positions	Position Range*	Required** +/- 5 counts	(P)ass/ (F)ail
1-30	5838	5836	P

* Actual range (min to max) of counts from printout (Only beam positions 1-30).
Rewriting counts on this data sheet is optional.

** Required counts from AE26002/2 TDS 6 +/- 5 counts for "true" nadir position.

ENGINEERING DATA				
Step	Description	Measured***	Required	(P)ass/(F)ail
4i	Signal Processor (+5 VDC)		+4 to +6 volts	P
	Signal Processor (+15 VDC)		+14 to +16 volts	P
	Signal Processor (-15 VDC)		-14 to -16 volts	P
	Scan Drive (+5 VDC)		+4 to +6 volts	P
	Scan Drive (+15 VDC)		+14 to +16 volts	P
	Scan Drive (-15 VDC)		-14 to -16 volts	P
	Mixer/IF Amplifier (+10 VDC)		+9 to +11 volts	P
	LO Channel 1		+9 to +11 volts	P
	LO Channel 2		+9 to +11 volts	P
	Quiet Bus Current		≤ 1 Amps	P
	Noisy Bus Current		≤ 150 milliamps	P

*** Rewriting printout data on this data sheet is optional.

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

[signature] 7/17/98
Test Systems Engineer Date

[signature] 9/24/98
Customer Representative Date

[signature] 7A 269 7/17/98
Quality Control Date

```
EOS  A2-04  E2.EXE;26 NADIR MODE          16-JUL-98  23:51:112 SCAN NUMBER  1221
[ 5 ] SCIENCE DATA     ELEMENT 0000
[ 6 ] CONTROL/STATUS   ELEMENT   00
[ 7 ] ENGINEERING      ELEMENT.  00

                                       COMMANDS
[ 9 ]  SCANNER A2 POWER =            ON    COLD CAL POSITION 1 =      YES [ 14 ]
[ 10 ] ANTENNA IN FULL SCAN MODE = NO      COLD CAL POSITION 2 =      NO  [ 15 ]
[ 11 ] ANTENNA IN WARM CAL POSIT = NO      COLD CAL POSITION 3 =      NO  [ 16 ]
[ 12 ] ANTENNA IN COLD CAL POSIT = NO      COLD CAL POSITION 4 =      NO  [ 17 ]
[ 13 ] ANTENNA IN NADIR POSITION = YES     RESET C&DH PROCESSOR           [ 18 ]
                                           GSE MODE                       [ 19 ]

ENGR OK   POWER          ON     CHECKSUM  IN 64D3 CALC 64D3   SA28   1064 SA29  1064
                         SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL       [ 1 ] RETURN
 SELECT BUTTON 3
```

N. :n

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
1	PACKET ID	00001001	138	REFLECTOR POSITION 17	5838
2		00100001	140	REFL POS 17 2ND LOOK	5838
3	PACKET LENGTH	00000001	142	SCENE DATA BP 17 CH 1	17211
4		01000101	144	CH 2	17286
5	UNIT SERIAL NUMBER	00000100	146	REFLECTOR POSITION 18	5838
6		00000000	148	REFL POS 18 2ND LOOK	5838
7	INSTRUMENT MODE/STATUS	10001000	150	SCENE DATA BP 18 CH 1	17215
8		00010000	152	CH 2	17285
10	REFLECTOR POSITION 1	5838	154	REFLECTOR POSITION 19	5838
12	REFL POS 1 2ND LOOK	5838	156	REFL POS 19 2ND LOOK	5838
14	SCENE DATA BP 1 CH 1	17209	158	SCENE DATA BP 19 CH 1	17220
16	CH 2	17276	160	CH 2	17282
18	REFLECTOR POSITION 2	5838	162	REFLECTOR POSITION 20	5838
20	REFL POS 2 2ND LOOK	5838	164	REFL POS 20 2ND LOOK	5838
22	SCENE DATA BP 2 CH 1	17214	166	SCENE DATA BP 20 CH 1	17217
24	CH 2	17280	168	CH 2	17282
26	REFLECTOR POSITION 3	5838	170	REFLECTOR POSITION 21	5838
28	REFL POS 3 2ND LOOK	5838	172	REFL POS 21 2ND LOOK	5838
30	SCENE DATA BP 3 CH 1	17216	174	SCENE DATA BP 21 CH 1	17213
32	CH 2	17282	176	CH 2	17279
34	REFLECTOR POSITION 4	5838	178	REFLECTOR POSITION 22	5838
36	REFL POS 4 2ND LOOK	5838	180	REFL POS 22 2ND LOOK	5838
38	SCENE DATA BP 4 CH 1	17218	182	SCENE DATA BP 22 CH 1	17214
40	CH 2	17276	184	CH 2	17281
42	REFLECTOR POSITION 5	5838	186	REFLECTOR POSITION 23	5838
44	REFL POS 5 2ND LOOK	5838	188	REFL POS 23 2ND LOOK	5838
46	SCENE DATA BP 5 CH 1	17217	190	SCENE DATA BP 23 CH 1	17214
48	CH 2	17291	192	CH 2	17277
50	REFLECTOR POSITION 6	5838	194	REFLECTOR POSITION 24	5838
52	REFL POS 6 2ND LOOK	5838	196	REFL POS 24 2ND LOOK	5838
54	SCENE DATA BP 6 CH 1	17212	198	SCENE DATA BP 24 CH 1	17214
56	CH 2	17281	200	CH 2	17276
58	REFLECTOR POSITION 7	5838	202	REFLECTOR POSITION 25	5838
60	REFL POS 7 2ND LOOK	5838	204	REFL POS 25 2ND LOOK	5838
62	SCENE DATA BP 7 CH 1	17213	206	SCENE DATA BP 25 CH 1	17215
64	CH 2	17285	208	CH 2	17279
66	REFLECTOR POSITION 8	5838	210	REFLECTOR POSITION 26	5838
68	REFL POS 8 2ND LOOK	5838	212	REFL POS 26 2ND LOOK	5838
70	SCENE DATA BP 8 CH 1	17214	214	SCENE DATA BP 26 CH 1	17214
72	CH 2	17282	216	CH 2	17277
74	REFLECTOR POSITION 9	5838	218	REFLECTOR POSITION 27	5838
76	REFL POS 9 2ND LOOK	5838	220	REFL POS 27 2ND LOOK	5838
78	SCENE DATA BP 9 CH 1	17220	222	SCENE DATA BP 27 CH 1	17218
80	CH 2	17283	224	CH 2	17284
82	REFLECTOR POSITION 10	5838	226	REFLECTOR POSITION 28	5838
84	REFL POS 10 2ND LOOK	5838	228	REFL POS 28 2ND LOOK	5838
86	SCENE DATA BP 10 CH 1	17212	230	SCENE DATA BP 28 CH 1	17215
88	CH 2	17279	232	CH 2	17285
90	REFLECTOR POSITION 11	5838	234	REFLECTOR POSITION 29	5838
92	REFL POS 11 2ND LOOK	5838	236	REFL POS 29 2ND LOOK	5838

ELEMENT	DESCRIPTION	VALUE	ELEMENT	DESCRIPTION	VALUE
94	SCENE DATA BP 11 CH 1	17214	238	SCENE DATA BP 29 CH 1	17213
96	CH 2	17284	240	CH 2	17274
98	REFLECTOR POSITION 12	5838	242	REFLECTOR POSITION 30	5838
100	REFL POS 12 2ND LOOK	5838	244	REFL POS 30 2ND LOOK	5838
102	SCENE DATA BP 12 CH 1	17217	246	SCENE DATA BP 30 CH 1	17213
104	CH 2	17280	248	CH 2	17280
106	REFLECTOR POSITION 13	5838	250	REFLECTOR COLD CAL POS	0E
108	REFL POS 13 2ND LOOK	5838	252	REFL COLD CAL 2ND LOOK	0E
110	SCENE DATA BP 13 CH 1	17214	254	COLD CAL DATA 1 CH 1	0
112	CH 2	17275	256	CH 2	0
114	REFLECTOR POSITION 14	5838	258	COLD CAL DATA 2 CH 1	0
116	REFL POS 14 2ND LOOK	5838	260	CH 2	0
118	SCENE DATA BP 14 CH 1	17212	302	REFLECTOR WARM CAL POS	0E
120	CH 2	17280	304	REFL WARM CAL 2ND LOOK	0E
122	REFLECTOR POSITION 15	5838	306	WARM CAL DATA 1 CH 1	0
124	REFL POS 15 2ND LOOK	5838	308	CH 2	0
126	SCENE DATA BP 15 CH 1	17218	310	WARM CAL DATA 2 CH 1	0
128	CH 2	17284	312	CH 2	0
130	REFLECTOR POSITION 16	5838			
132	REFL POS 16 2ND LOOK	5838			
134	SCENE DATA BP 16 CH 1	17213			
136	CH 2	17279			

ELEMENT	DESCRIPTION	VALUE	TEMPERATURE DEG C
262	SCAN MOTOR	18566	23.25
264	FEED HORN	18420	24.19
266	RF MUX	18962	25.29
268	MIXER/IF AMPLIFIER CHANNEL 1	19476	26.18
270	MIXER/IF AMPLIFIER CHANNEL 2	19631	26.17
272	LOCAL OSCILLATOR CHANNEL 1	19195	25.85
274	LOCAL OSCILLATOR CHANNEL 2	19769	26.47
276	1553 INTERFACE	14460	30.07
278	SUB REFLECTOR	18136	23.46
280	DC/DC CONVERTER	20412	28.29
282	RF SHELF	19181	24.95
284	DETECTOR/PREAMP ASSEMBLY	19589	25.38
286	WARM LOAD CENTER	23180	23.80
288	WARM LOAD 2	23722	23.71
290	WARM LOAD 3	23326	23.73
292	WARM LOAD 4	23215	23.81
294	WARM LOAD 5	23196	23.80
296	WARM LOAD 6	23694	23.79
298	WARM LOAD 1	23550	23.76
300	TEMP SENSOR REFERENCE VOLTAGE	25091	

DESCRIPTION	
ANTENNA IN FULL SCAN MODE	NO
ANTENNA IN WARM CAL MODE	NO
ANTENNA IN COLD CAL MODE	NO
ANTENNA IN NADIR MODE	YES
COLD CAL POSITION LSB	ZERO
COLD CAL POSITION MSB	ZERO
A2 SCANNER POWER	ON
ADC LATCHUP FLAG	ONE

ENGINEERING DATA

DESCRIPTION	DEG C
SCAN MOTOR TEMPERATURE	22.0
RF SHELF TEMPERATURE #1	22.2
WARM LOAD TEMPERATURE	22.2
RF SHELF TEMPERATURE #2	22.4

DESCRIPTION		VALUE	MA / VOLTS
SIGNAL PROCESSOR	+5 VDC	22182	4.93
	+15 VDC	21843	15.05
	-15 VDC	21862	-15.07
ANTENNA DRIVE	+5 VDC	22112	4.94
	+15 VDC	22049	14.99
	-15 VDC	21866	-15.06
MIXER/IF AMPLIFIER	+10 VDC	21689	9.94
LO CHANNEL 1	+10 VDC	21278	10.05
LO CHANNEL 2	+10 VDC	21394	10.02
QUIET BUS CURRENT		13469	604.59
NOISY BUS CURRENT		518	1.40

PRT TEMPERATURES

	NO.	DEG K	NO.	DEG K
VARIABLE TARGET	601	14.00	607	20.00
	602	15.00	608	21.00
	603	16.00	609	22.00
	604	17.00	610	23.00
	605	18.00	611	24.00
	606	19.00		
FIXED TARGET	612	39.00	618	45.00
	613	40.00	619	46.00
	614	41.00	620	47.00
	615	42.00	621	48.00
	616	43.00	622	49.00
	617	44.00		
BASEPLATE	623	25.00	625	50.00
	624	26.00	626	27.00

THERMOCOUPLE TEMPERATURES

	NO.	DEG K	NO.	DEG K
FIXED TARGET SHROUD	532	32.00	533	33.00
VARIABLE TARGET SHROUD	515	7.00	516	8.00
FIXED TARGET N2	502	30.00	503	31.00
VARIABLE TARGET N2	507	5.00	508	6.00
HEATER N2	505	1.00	506	2.00
FIXED TARGET FLOW METER	504	34.00		
VARIABLE TARGET FLOW METER	509	9.00		
BASEPLATE HEATER N2	510	3.00	511	4.00
BASEPLATE N2	512	36.00	513	37.00
BASEPLATE FLOW METER	514	35.00		
ADJUNCT RADIATORS	549	38.00	554	55.00
	542	10.00	556	57.00

TEST DATA SHEET NO. 13
1553 Bus Interface Test (Paragraph 3.3.5.4)

ATTACH BUS A WAVEFORM

			Pass/Fail
BUS A AMPLITUDE	21.0V	: 18.0 - 27.0 Vp-p	P
BUS A RISE TIME	260 NS	: 100 - 300 nsec	P

ATTACH BUS B WAVEFORM

			Pass/Fail
BUS B AMPLITUDE	21V	: 18.0 - 27.0 Vp-p	P
BUS B RISE TIME	250	: 100 - 300 nsec	P

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________

Test Systems Engineer R. Haisl Date 7/20/98

Quality Control Date 7/20/98

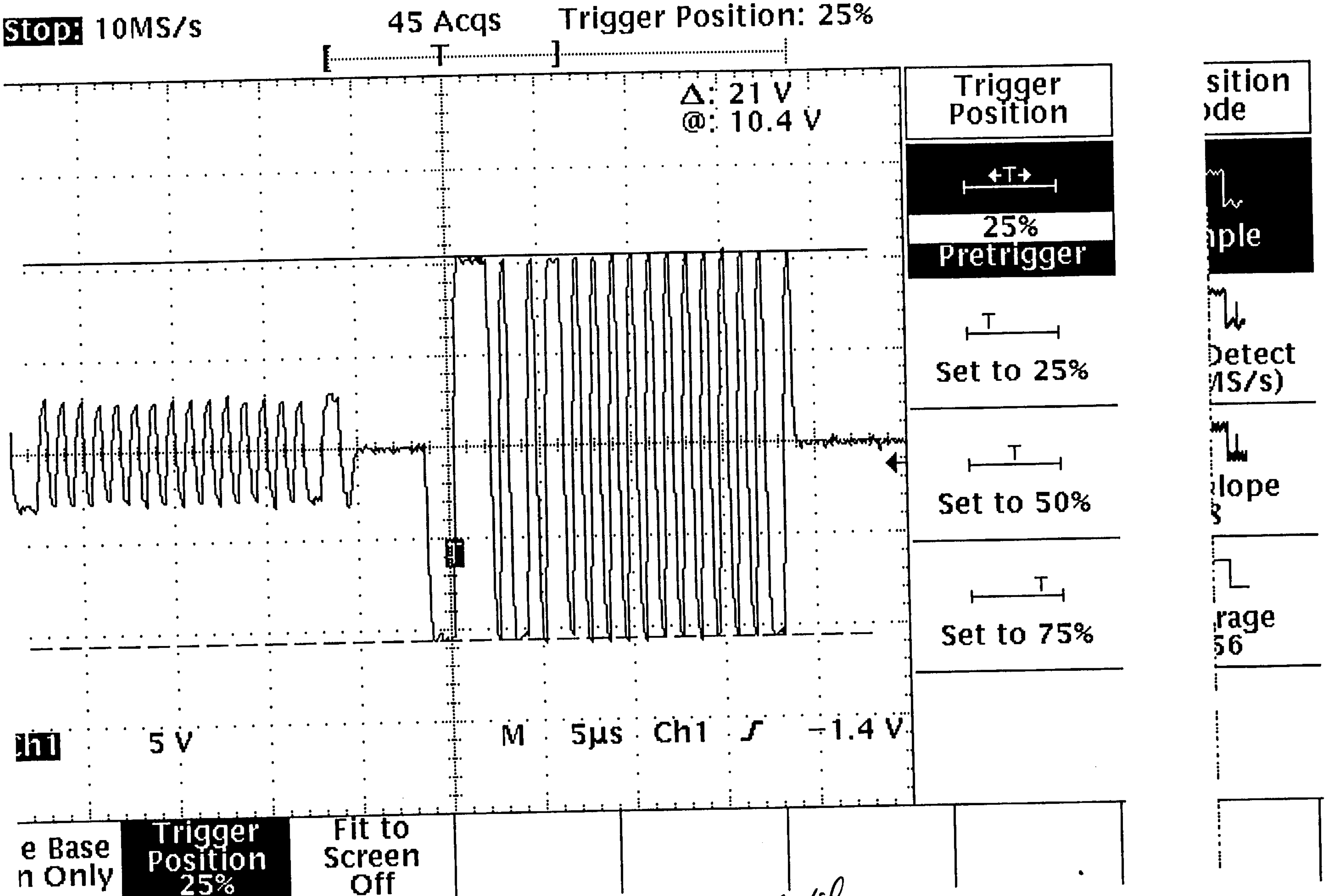
QA 269

Customer Representative Date 9/24/98

C L 2377

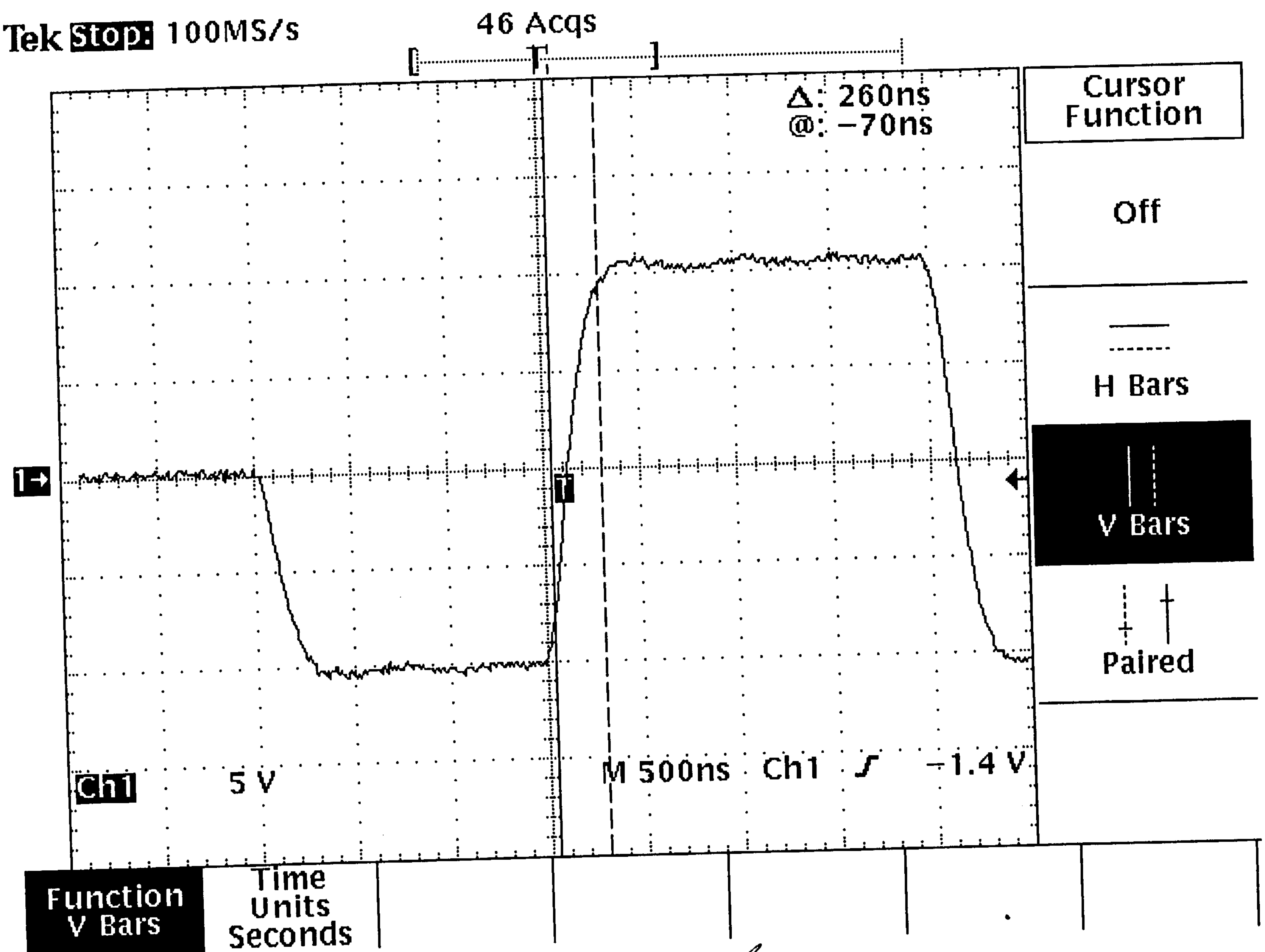
6-12-98 J. Palumbo

QC 16

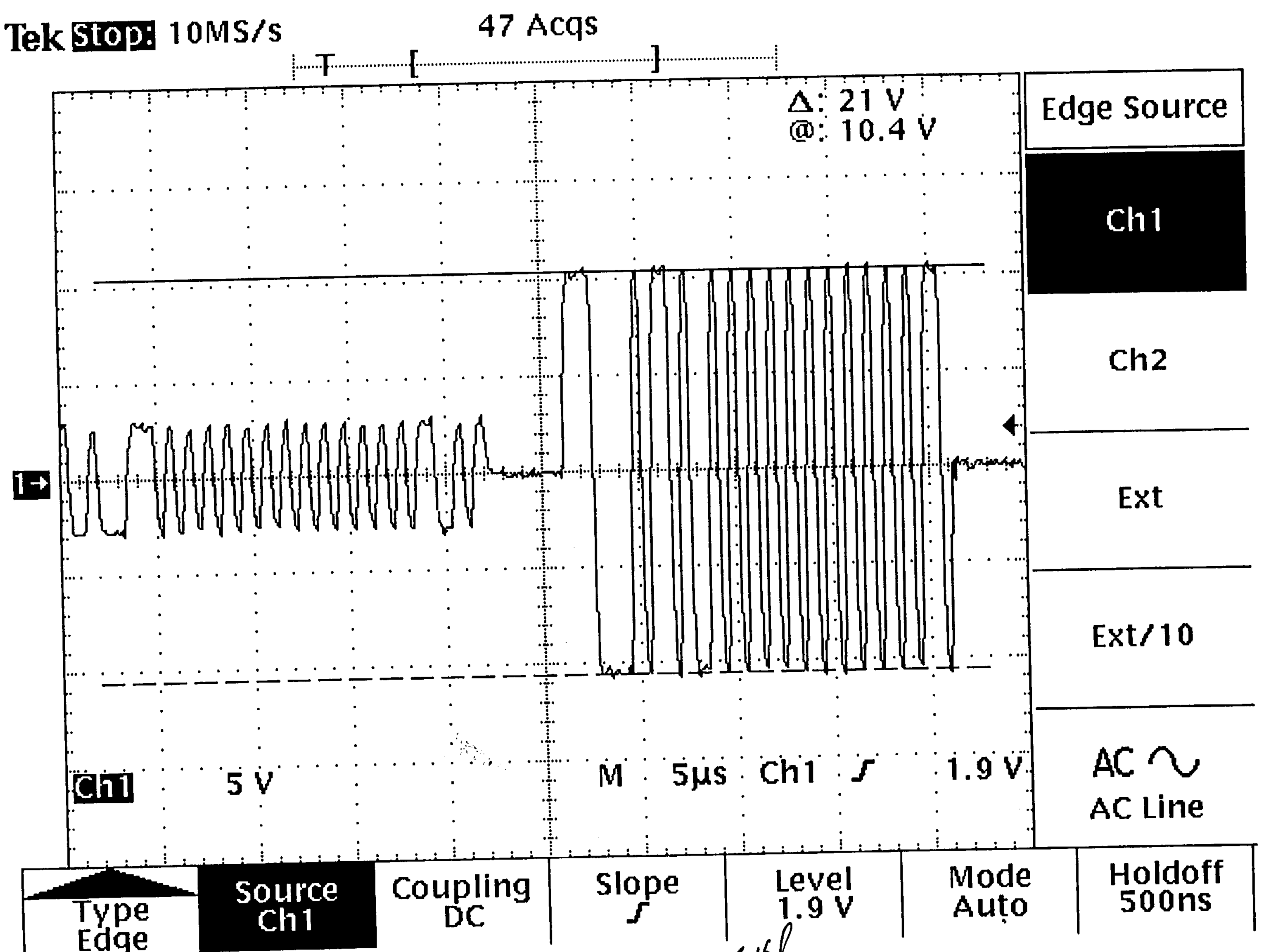


R. Hail 7/20/98

FINAL CPT TDS 13 CH-A AMPLITUDE

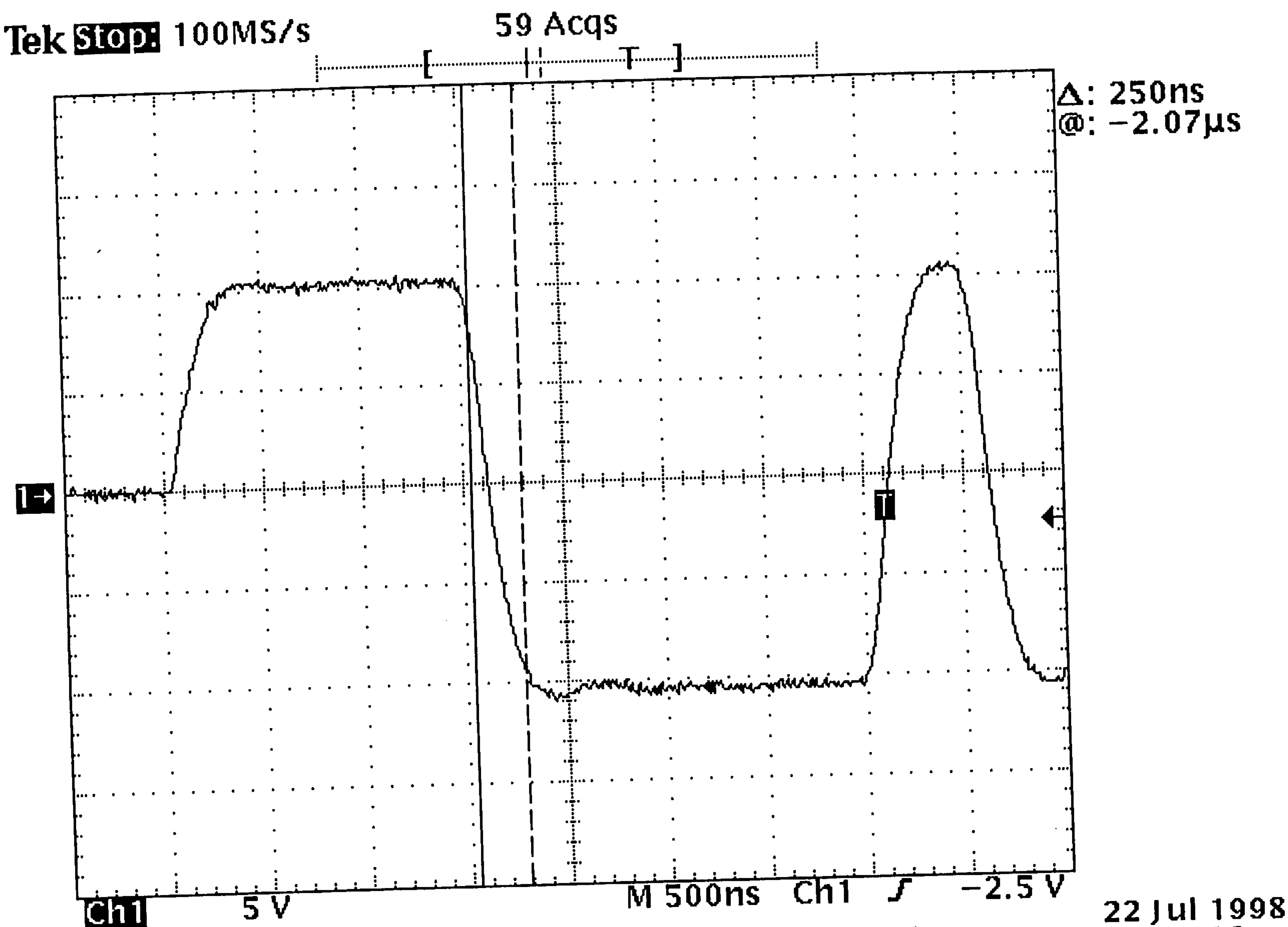


P.3.3.5.4 7/20/98 R. [signature]
FINALCPT TDS13 CH A RISE TIME



FINAL CPT
P.3.3.5.4 TDS13 CH-B AMPLITUDE

R. Hal 7/22/98



FINAL CPT
P.3.3.5.4

TDS13

R. Hill 7/22/98

CH-B RISETIME

SHEET 88 OF ____
ECR NO. 1826

AE-26156/10
7 Apr 98

TEST DATA SHEET NO. 14
Test Point Interface Test (8 Second Sync Pulse TP) (Paragraph 3.3.6.1)

8 SECOND SYNC PULSE TEST POINT

Attach Photograph or Plot Here or to Back of TDS

8 SECOND SYNC PULSE TEST POINT				
Step	Parameter	Measured	Required	(P)ass / (F)ail
2	Pulse Length	8 seconds	8 seconds +/- 10%	P
~~2~~	~~Amplitude~~	~~volts~~	~~3-5 volts~~	

NOT REQUIRED
R. M. [illegible]
6-5-98
QC 213

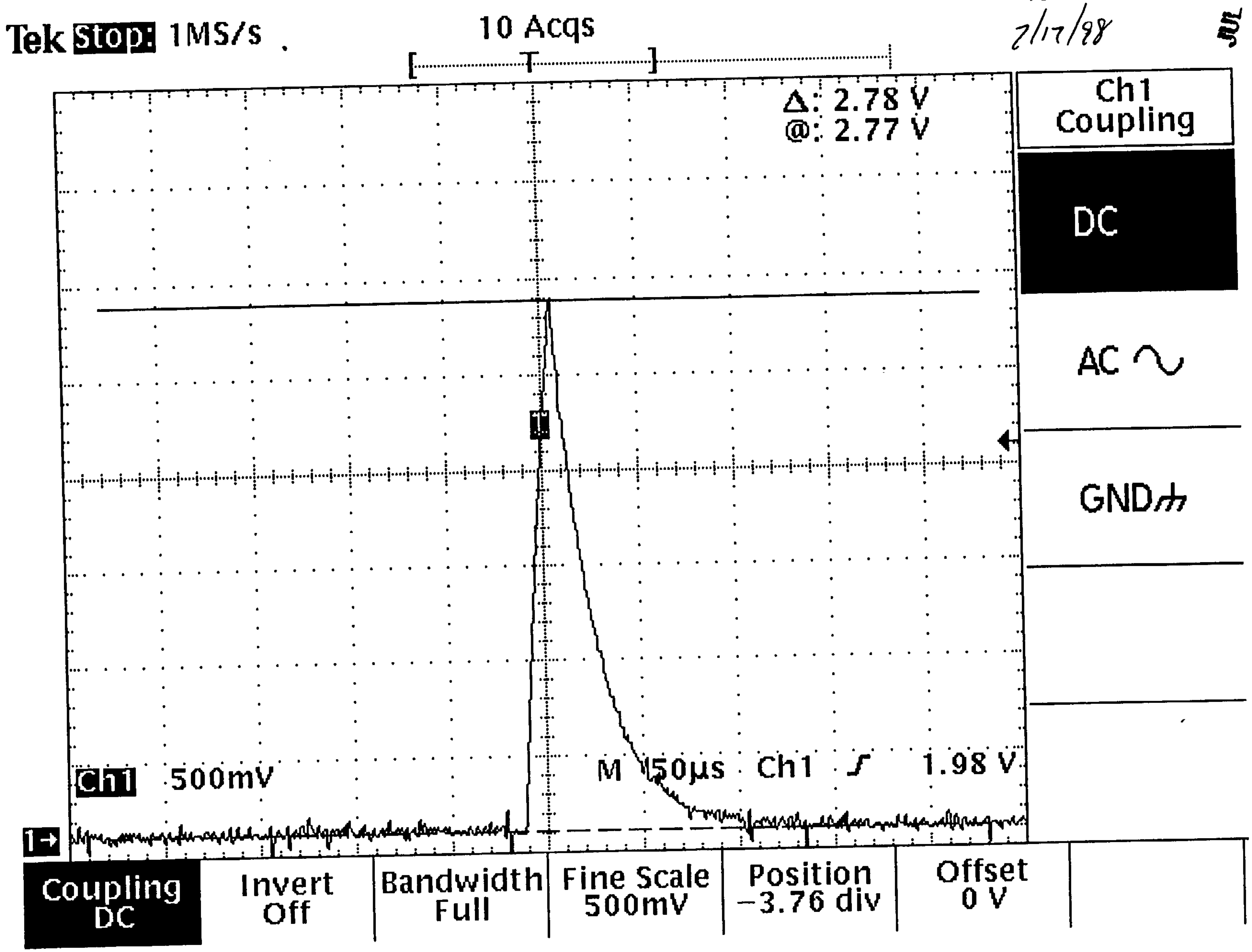
EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________

R. [illegible] 7/17/98
Test Systems Engineer Date
JUL 17 1998
Quality Control Date
187

2377
9/24/98
Customer Representative Date

TDS 14 AE 26156/10 P.3.3.6.2 8SEC. SYNC R. [illegible] 7/17/98

JUL 17 1998



TEST DATA SHEET NO. 15

Test Point Interface Test (Integrate/Hold and Dump TPs) (Paragraph 3.3.6.2)

INTEGRATE/HOLD AND DUMP TEST POINTS

Attach Photograph or Plot Here or to Back of TDS

INTEGRATE/HOLD SIGNAL TEST POINT				
Step	Parameter	Measured	Required	(P)ass / (F)ail
4	Time Measured (A)*	milliseconds	158 ±5ms	158ms P
4	Time Measured (B)*	milliseconds	38 -46 ms	45ms P
4	Time Measured (A&B)*	milliseconds	200 ±5ms	202ms P
~~4~~	~~Amplitude~~	~~volts~~	~~4-6 volts~~	*

DUMP SIGNAL TEST POINT				
Step	Parameter	Measured	Required -	(P)ass / (F)ail
4	Time Measured (D)*	12ms ms	9-15 ms	P
~~4~~	~~Amplitude~~	~~volts~~	~~4-6 volts~~	*

* Refer to Figure 18 for Waveform Definition

* NOT REQUIRED
R. M. Mc[illegible] 6-5-98

QC 218

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202

Circle Test: 1st CPT Final CPT Sub CPT ________

9/24/98
Customer Representative Date

R. Hi[illegible] 7/17/98
Test Systems Engineer Date

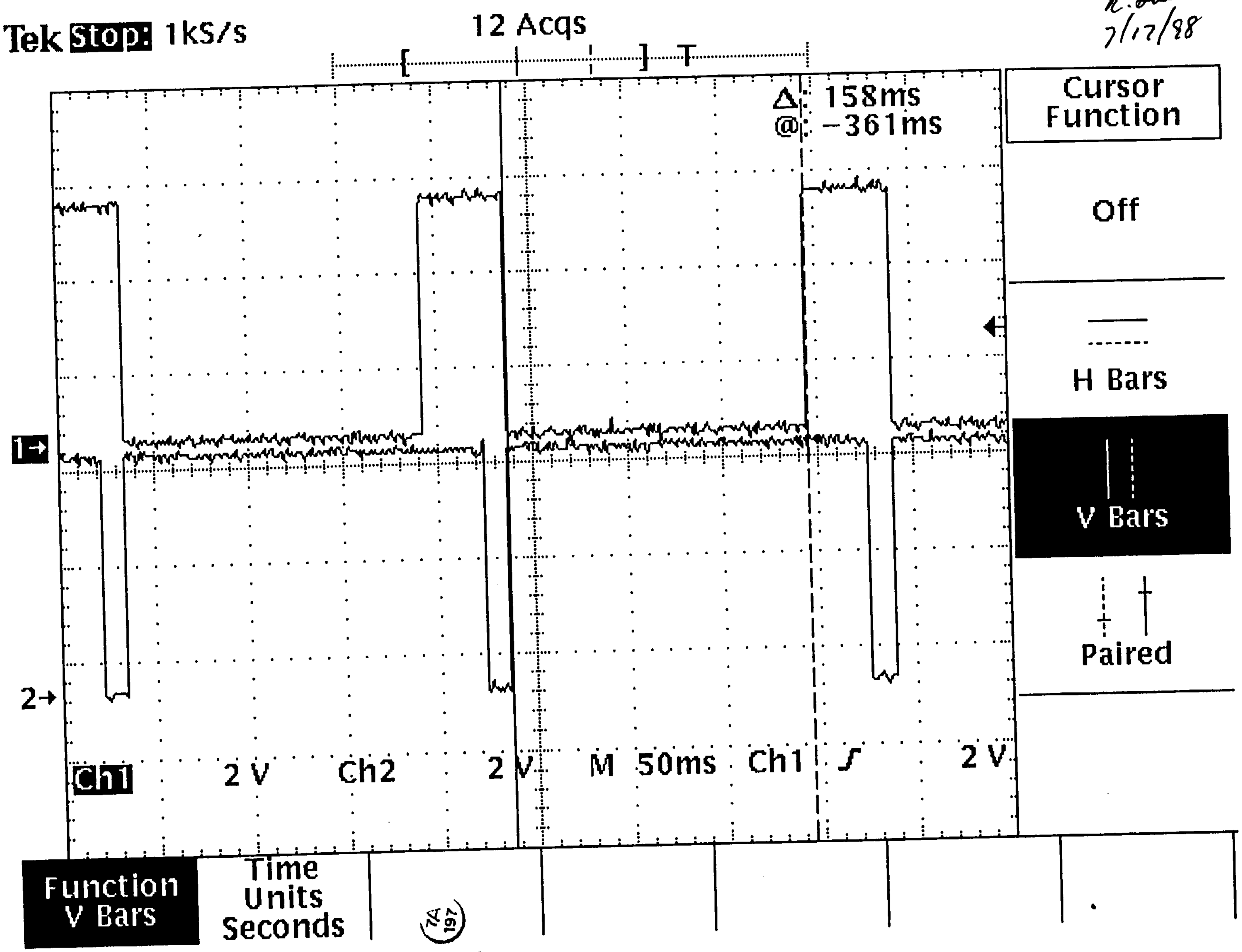
7/17/98
Quality Control Date

JUL 17 1998

9/12/98 J. [illegible]

AE 56/10 P. 3.3.6.2 INTEGRATE/HOLD

R. [illegible]
7/17/98



JUL 17 1998

TEST DATA SHEET NO. 16

Test Point Interface Test (Radiometer Channel Analog Output TPs) (Paragraph 3.3.6.3)

RADIOMETER CHANNEL ANALOG OUTPUT TEST POINTS

Attach Photographs or Plots Here or to Back of TDS

RADIOMETER CHANNEL ANALOG OUTPUT TEST POINTS

Channel	Integration Time Measured (E)*	Integration Time Required (ms)	Hold Time Measured (F)*	Hold Time Required (ms)	Dump Time Measured D ~~(F)~~*	Dump Time Required (ms)	(P)ass / (F)ail
1	158 ms	158 ±5ms	34 ms	29-35	12 ms	9-15	P
2	158 ms	158 ±5ms	34 ms	29-35	12 ms	9-15	P

* Refer to Figure 18 for Waveform Definition

R.M.M. 6-5-

QC 218

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202
Circle Test: 1st CPT Final CPT Sub CPT ________

R. Hail 7/17/98
Test Systems Engineer Date

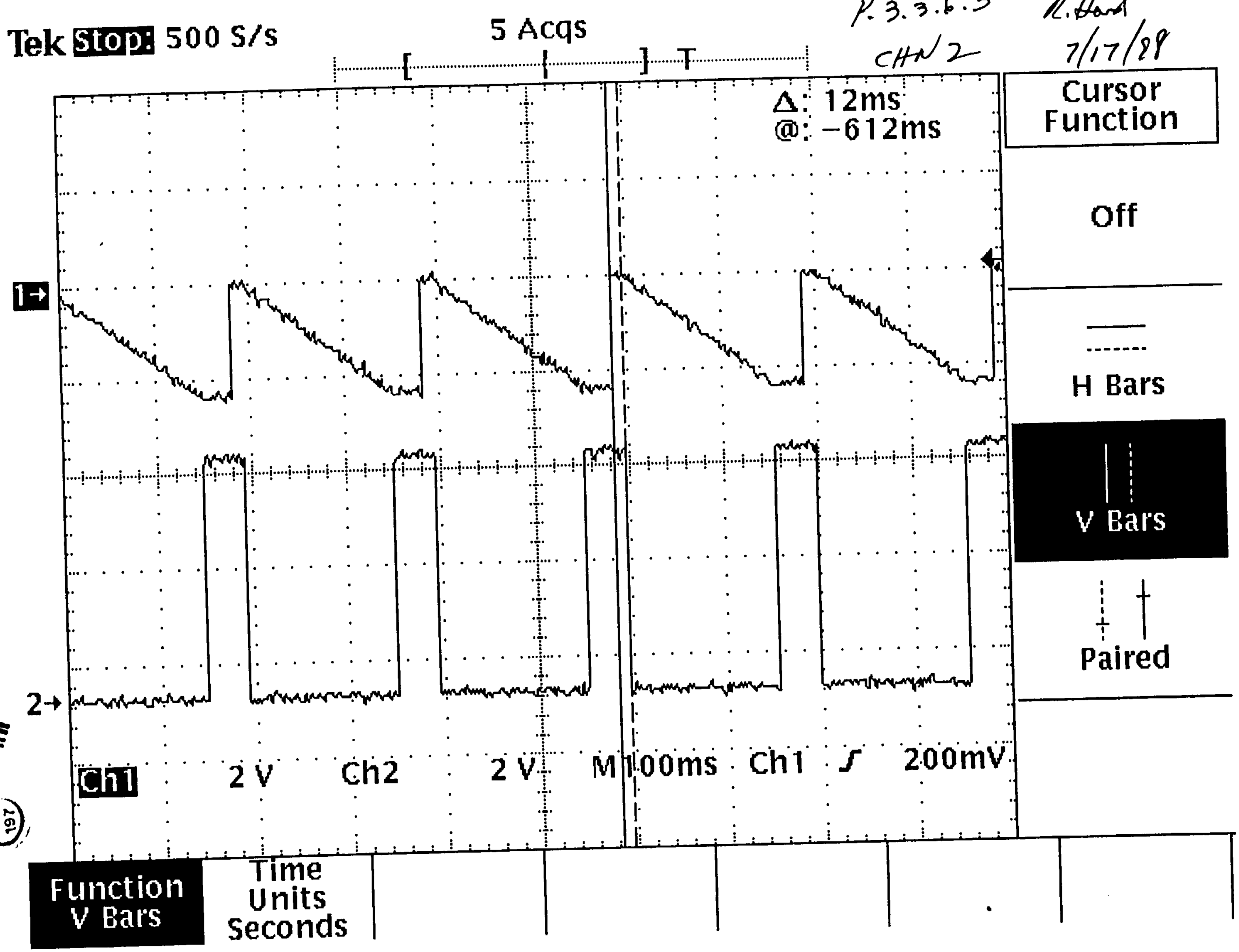
JUL 17 1998
Quality Control Date

QC 197

Customer Representative Date

J. Han 6-12-98 QC

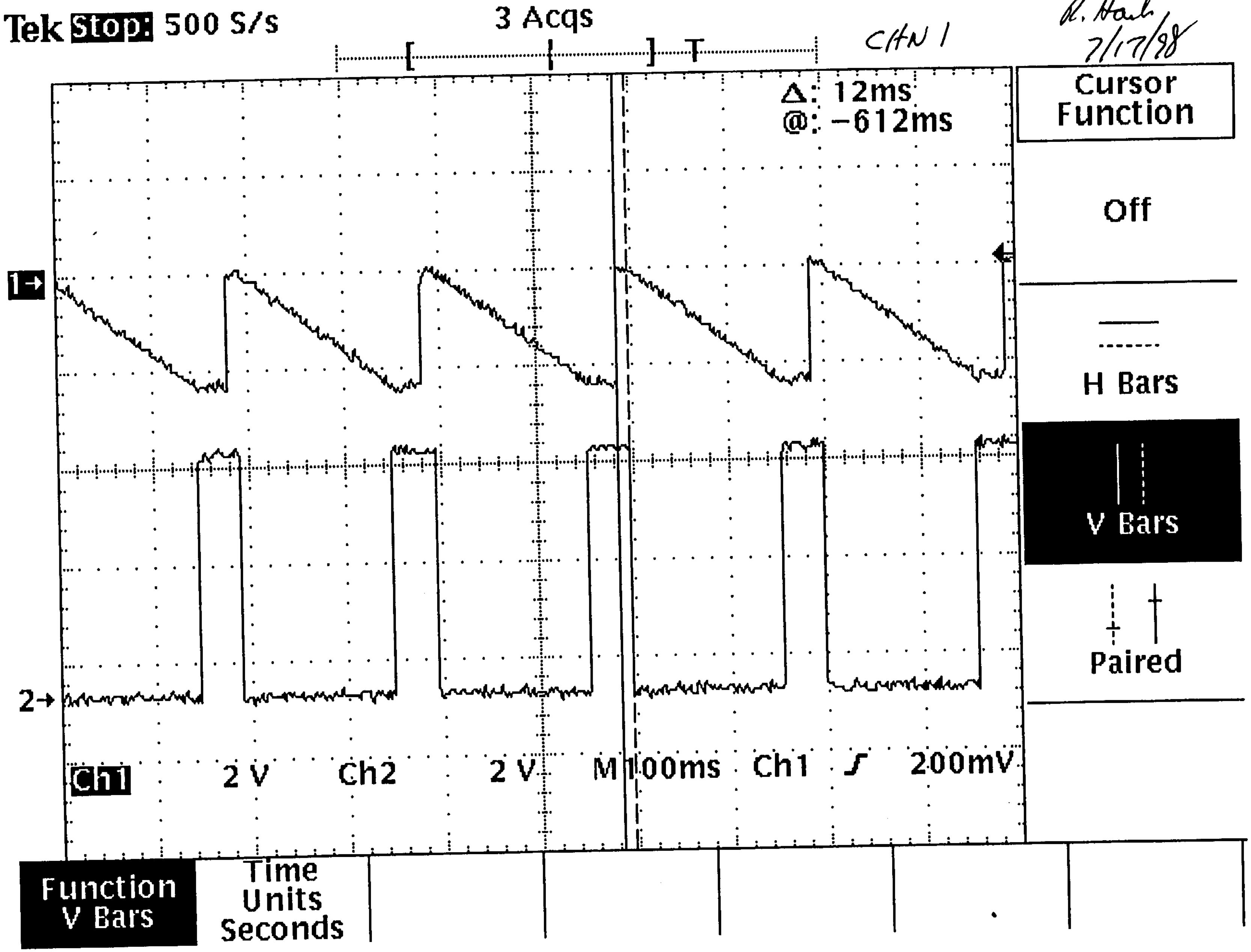
AE26156/10
P.3.3.6.3
CHN 2
R. Hard
7/17/98



JUL 17 1998
TA 197

AE 26156/10
P. 3.3.6.3

R. Hail
7/17/98



JUL 17 1998

AE-26156/10
7 Apr 98

SHEET ____ OF ____
ECR NO. ________

TEST DATA SHEET NO. 18

Radiometer Functional Performance Test (Relative NEΔT Measurements*) (Paragraph 3.3.7.1)

RELATIVE NEΔT MEASUREMENTS			
Channel Number	Average NEΔT for 5 Data Sets (K)	Required** NEΔT (K)	Pass/Fail
1	0.204	0.30	P
2	0.219	0.30	P

P = Pass F = Fail

* Baseline data for acceptance tests. Use 1st CPT data along with specification value for pass/fail criteria

** For reference only

EOS/AMSU-A2 System P/N 1356006 Shop Order: 509734 S/N: 202

Circle Test: 1st CPT Final CPT Sub CPT ________ LPT ________

[signature] 7-17-98
Test Systems Engineer Date

197 JUL 17 1998
Quality Control Date

Customer Representative Date

p 3.3.71 HE2 156/10
TDS #18

A2 FUNCTIONAL TEST RESULTS
E2.EXE;26 17-JUL-98 11:03:59

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
1	295.91	17241.0	14293.0	0.073	0.187
2	295.91	17254.0	14207.0	0.071	0.210

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]

SELECT BUTTON 2

A2 FUNCTIONAL TEST RESULTS
E2.EXE;26 17-JUL-98 11:01:11

p 3.3.7.1
TDS #18.

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
1	295.97	17243.0	14307.0	0.074	0.224
2	295.97	17256.0	14221.0	0.071	0.216

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]

SELECT BUTTON 2

p 3.3.7.1
TDS #18

A2 FUNCTIONAL TEST RESULTS
E2.EXE;26 17-JUL-98 10:57:59

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
1	296.01	17247.0	14357.0	0.075	0.210
2	296.01	17261.0	14268.0	0.072	0.234

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]

SELECT BUTTON 2

A2 F..NCTIONAL TEST RESULTS
E2.EXE;26 17-JUL-98 11:06:07

p 3.3.7.1
TDS #18

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
1	295.86	17240.0	14294.0	0.073	0.189
2	295.86	17252.0	14209.0	0.071	0.220

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]

SELECT BUTTON 2

A2 FUNCTIONAL TEST RESULTS
E2.EXE;26 17-JUL-98 11:08:15

P 3.3.7.1
TDS #18.

CH	WARM TEMP	WARM COUNTS	COLD COUNTS	GAIN	DELTA T
1	295.82	17240.0	14320.0	0.074	0.211
2	295.82	17253.0	14245.0	0.072	0.213

[2] PRINT SCREEN [3] PRINT RAW DATA [4] PRINT HISTOGRAM

[5] PRINT DISTRIBUTION GRAPH RETURN [1]

SELECT BUTTON 2

ADD L. Palmisano 7-27-98

QC 236 7-28-98

TEST DATA SHEET 19

Channel Identification Test (Paragraph 3.3.8)

ECN 1888

QC 19 7-29-98

Channel Number	Sweeper Freq. Setting (GHz)	Polarization (H/V)	Radiometric Data (Δ Counts)	Channel Verified (Yes/No)
1	23.8	V	4819	YES
2	31.4	V	3952	YES

EOS/AMSU-A2 System P/N 1356006

Shop Order: 509734 S/N: 202

Circle Test: 1st CPT Final CPT

Sub CPT ________ LPT ________

AMSU 11 SEIT 7-30-98

Test Systems Engineer Date

7/30/98

Customer Representative Date

7/30/98

Quality Control QA 269 Date

EOS A2-04 E2.EXE;26 COLD CAL MODE 30-JUL-98 0[illegible].38:530 SCAN NUMBER 21

[5] SCIENCE DATA ELEMENT 0000

[6] CONTROL/STATUS ELEMENT 00

[7] ENGINEERING ELEMENT 00

RADIOMETRIC DATA PRE CHANNEL I.D TEST

BEAM POSITION 30

CH	DATA
1	17510
2	17371

[21] UP [22] DOWN

ENGR OK POWER ON CHECKSUM IN 7395 CALC 7395 SA28 22 SA29 22

SCREEN ONLY [2] PRINT [3] FULL [1] RETURN

SELECT BUTTON 2

S/O: 509734

OPER: 0580 STEP C

EOS A2-04 E2.EXE;26 COLD CAL MODE 30-JUL-98 06.41:010 SCAN NUMBER 37

[5] SCIENCE DATA ELEMENT 0000

[6] CONTROL/STATUS ELEMENT 00

[7] ENGINEERING ELEMENT 00

RADIOMETRIC DATA CHAN 1

BEAM POSITION 30

CH	DATA
1	22329
2	17357

[21] UP [22] DOWN

ENGR OK POWER ON SCREEN CHECKSUM ONLY [2] IN 9D11 CALC 9D11 PRINT [3] FULL SA28 38 SA29 38 [1] RETURN

SELECT BUTTON 2

S/O : 509734

OPER : 0580 STEP C

```
EOS  A2-04  E2.EXE;26 COLD CAL MODE       30-JUL-98  06:44:130 SCAN NUMBER    61
[ 5 ] SCIENCE DATA    ELEMENT 0000

[ 6 ] CONTROL/STATUS  ELEMENT   00

[ 7 ] ENGINEERING     ELEMENT   00

                              RADIOMETRIC DATA  CHAN 2

                          BEAM POSITION 30

                               CH  DATA
                                1 17472
                                2 21323


[ 21 ] UP                  [ 22 ] DOWN

ENGR OK   POWER        ON    CHECKSUM  IN 6BD5 CALC 6BD5   SA28     62 SA29     62
                       SCREEN ONLY [ 2 ]  PRINT  [ 3 ] FULL        [ 1 ] RETURN
 SELECT BUTTON 2
```

S/O: 509734

OPER: 0580 STEP C

```
EOS  A2-04  E2.EXE;26 COLD CAL MODE       30-JUL-98  (   45:250 SCAN NUMBER     70
[ 5 ] SCIENCE DATA      ELEMENT 0000

[ 6 ] CONTROL/STATUS    ELEMENT    00

[ 7 ] ENGINEERING       ELEMENT    00
```

RADIOMETRIC DATA POST CHANNEL ID TEST

BEAM POSITION 30

CH	DATA
1	17465
2	17334

```
[ 21 ] UP                    [ 22 ] DOWN

ENGR OK    POWER          ON     CHECKSUM  IN 6E44 CALC 6E44    SA28      71 SA29     71
                          SCREEN ONLY [ 2 ]   PRINT   [ 3 ] FULL          [ 1 ] RETURN
 SELECT BUTTON 2
```

S/O: 509734

OPER:0580 STEP C

DATE: June 11, 1998

TO: POES PROJECT CCB MEMBERS/REVIEWERS

FROM: POES PROJECT CONFIGURATION MANAGEMENT OFFICE

SUBJECT: POES PROJECT REVIEW SHEET FOR CCR R120

COGNIZANT ENGINEER: S. KRIMCHANSKY

CCR TITLE: EOS AMSU-A2 EMI WAIVER

RESPONSES ARE REQUIRED BY: JUNE 19, 1998

Review the attached CCR. Indicate your recommendation for approval, approval with changes, or disapproval.

Return this form and CCR to the CM office by the above due date. If you cannot respond by the due date, notify the CM office of your anticipated date of completion. After all responses are received, the cognizant engineer will review and consolidate the responses. Once the responses have been reconciled, the CCR will be submitted to the designated approving signator or a CCB meeting will be scheduled for CCB Chairperson disposition.

RECOMMENDATIONS:

APPROVE ✓ APPROVE WITH CHANGES___ DISAPPROVE___

COMMENTS/CHANGES

SIGNATURE: Mark Doman DATE 10-20-98

REVIEWERS: This CCR is being routed to all reviewers at the same time.

X	DEPUTY PROJECT MANAGER/A. ASARBARZIN		CONTRACT OFFICER/S. MARSHALL
	OBSERVATORY MANAGER/M. TASEVOLI		FINANCIAL MANAGER/J. LIU
	SYSTEMS MANAGER/D. COOLIDGE		DATA OPERATIONS MGR/K. HALTERMAN
X	FLIGHT ASSURANCE MANAGER/W. DANEY	X	SCHEDULE MANAGER/W. MAJEROWICZ
	INSTRUMENT SYSTEMS MGR/K. BRUMFIELD		RESOURCE ANALYST/R. MCCASKILL
X	INSTRUMENT SYSTEMS MGR/D. CROSBY		RESOURCE ANALYST/M. RICH
	DEPUTY PROJECT MANAGER RESOURCES/ D. PENNINGTON	X	NOAA/J. O'NEAL/P. GREEN/P. KIM/D. FLANAGAN/J. PARKER
X	CONTRACT MANAGER/J. BANISZEWSKI		METOP I&T MANAGER/R. ALEMAN
	CONTRACT OFFICER/G. STEWART	X	NSI/A. ARMAN
	CONTRACT OFFICER/C. WALKER		ELECTRICAL SYSTEMS MGR/W. JENKINS
X	CONTRACT SPECIALIST/K. SEXTON	X	EOS

TO

CHANGE RECORD PAGE

DOCUMENT TITLE: Unique Instrument Interface Document (UIID) for the EOS Advanced Microwave Sounding Unit (AMSU-A) Instrument, EOS PM Project

DOCUMENT DATE: June 1993

ISSUE	DATE	PAGES AFFECTED	DESCRIPTION
Initial Release	4/16/91	All	Initial Release (Doc. Number 422-25-05) for Phase C/D RFP for AMSU-A
Original	6/93	All	This Release (Doc. Number 422-12-12-02) is the Baselined Contractual version and supersedes the previous version and reflects the change from the use of a GIIS (General Instrument Interface Specification) to a GIRD (General Interface Requirements Document), dated June, 1993, which will be used for the EOS common spacecraft procurement.
CH-01	1/94	iii, iv, 2-1, 5-2	CCR# 422-12-12-002
REVISION A	6/94	ALL	CCR# 422-12-12-007
CH-01	9/94	iii, iv, 5-5	CCR# 422-12-12-009
CH-02	7/96	iii, iv, vi, 5-5, and page 5-6 was added	CCR# 422-12-12-010
CH-03	11/96	iii, iv, 2-1, 3-2, 3-4, 3-5, 3-6, 3-7, 5-6	CCR# 422-12-12-011
CH-04	03/97	iii, iv, 3-2, 3-5, 5-7	CCR# 422-12-12-012
CH-05	11/97	iii, iv, vi, 5-7, 5-8	CCR# 422-12-12-013
CH-06	03/98	iii, iv, 5-2	CCR# 422-12-12-014
CH-07	10/98	iii, iv, vi,5-7 5-8	CCR# 422-12-12-015
CH-08	10/98	iii, iv, 5-9	CCR# 422-12-12-019

EOS 423-CM-05 (4/92)

DOCUMENT TITLE: Unique Instrument Interface Document (UIID) for the EOS Advanced Microwave Sounding Unit (AMSU-A) Instrument, EOS PM Project
RELEASE DATE: June 1993

LIST OF AFFECTED PAGES

Page No.	Revision	Page No.	Revision	Page No.	Revision
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Title Page	REVISION A				
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iv	CH-08				
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3-4	CH-03				
3-5	CH-04				
3-6	CH-03				
3-7	CH-03				
4-1	REVISION A				
5-1	REVISION A				
5-2	CH-06				
5-3	REVISION A				
5-4	REVISION A				
5-5	CH-02				
5-6	CH-03				
5-7	CH-07				
5-8	CH-07				
5-9	CH-08				
A-1	REVISION A				
A-2	REVISION A				

EOS 420-CM-04 (4/93)

TO

32. The instrument shall meet the EMC/EMI requirments defined in 10.11.1 through 10.11.8 (GIRD para 10.11)/The AMSU-A2 instrument EMC/EMI charecteristics for CE03, RE02, RE01 are identified in the attachments to POES Project CCR# 8120 Waiver)/ Ref. CCR#422-12-12-019 CH-08

NASA
National Aeronautics and Space Administration

Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
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4. Title and Subtitle	5. Report Date
Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Report	November1998
	6. Performing Organization Code ---
7. Author(s) R. Platt	8. Performing Organization Report No. 11336
	10. Work Unit No. ---
9. Performing Organization Name and Address Aerojet 1100 W. Hollyvale Azusa, CA 91702	11. Contract or Grant No. NAS 5-32314
12. Sponsoring Agency Name and Address NASA Goddard Space Flight Center Greenbelt, Maryland 20771	13. Type of Report and Period Covered Final
	14. Sponsoring Agency Code ---

15. Supplementary Notes

---

16. ABSTRACT (*Maximum 200 words*)

This is the Performance Verification Report, Final Comprehensive Performance Test Report, P/N 1356006-1-IT, S/N 202, for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).

17. Key Words (Suggested by Author(s))	18. Distribution Statement
EOS Microwave System	Unclassified --- Unlimited

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of pages	22. Price
Unclassified	Unclassified		---

NASA FORM 1626 OCT 86

PREPARATION OF THE REPORT DOCUMENTATION PAGE

The last page of a report facing the third cover is the Report Documentation Page, RDP. Information presented on this page is used in announcing and cataloging reports as well as preparing the cover and title page. Thus, it is important that the information be correct. Instructions for filing in each block of the form are as follows:

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Block 9. Performing Organization Name and Address. Provide affiliation (NASA program office, NASA installation, or contractor name) of authors.

Block 10. Work Unit No. Provide Research and Technology Objectives and Plants (RTOP) number.

Block 11. Contract or Grant No. Provide when applicable.

Block 12. Sponsoring Agency Name and Address. National Aeronautics and Space Administration, Washington, D.C. 20546-0001. If contractor report, add NASA installation or HQ program office.

Block 13. Type of Report and Period Covered. NASA formal report series; for Contractor Report also list type (interim, final) and period covered when applicable.

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Block 15. Supplementary Notes. Information not included elsewhere: affiliation of authors if additional space is required for Block 9, notice of work sponsored by another agency, monitor of contract, information about supplements (file, data tapes, etc.) meeting site and date for presented papers, journal to which an article has been submitted, note of a report made from a thesis, appendix by author other than shown in Block 7.

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Block 20. Security Classification (of this page). Self-explanatory.

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4. TITLE AND SUBTITLE Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Performance Verification Report		5. FUNDING NUMBERS NAS 5-32314	
6. AUTHOR(S) R. Platt			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Aerojet 1100 W. Hollyvale Azusa, CA 91702		8. PERFORMING ORGANIZATION REPORT NUMBER 11336 November 1998	
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